

ARMY COMMUNICATOR

Voice of the Signal Regiment PB 11-11-12 2011 Vol. 36 No. 4

WHAT WILL THE SIGNAL REGIMENT LOOK LIKE IN THE FUTURE?



PLUS:

- *Distinguished Members of the Regiment recognized*
- *Implementing an Iraq exit strategy*
- *Web-based mission control*

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Creative leadership key to meeting challenges

Leaders,

The Signal Corps has a wealth of battle-tested leaders across our Regiment who understand that there are difficult choices ahead.

Today we are at the height of resourcing with a large standing Army made up of top notch military, civilians and contractors. Due to our economy and the pending withdrawal from Iraq and Afghanistan we are expecting to decrease the size of the force.

These challenges cause tensions and anxieties across the force. We will be smaller but we can also be a more capable Army and Signal Corps if we work together.

The good news is that everyone understands the importance of the network and our cyber force contributions so we are in a better position than many.

For the past 21 months, we have been working within the Regiment to produce smaller, more transportable equipment and force structure to support the installation and defense of our networks. As you know, we have coined this effort as micro-cyber (μ Cyber).

As you examine this edition of the *Army Communicator*, think about the role you play in this transformation. Whether you are in the field or in the classroom think about the impact you make professionally and whether or not your approach needs an "upgrade."

No matter how many changes we make to the way our Regiment operates, those changes will be outdated quickly if we fail to modernize not only our equipment but the way we think.

The way we lead, follow and build our teams must evolve in a way that produces results for today's Army. Remember: We are an experienced force with communication requirements that are growing exponentially while resources are decreasing.

The restructuring of our expeditionary Signal battalions and extending the reach of our systems to connect more users has become a battle-rhythm event for our units. Our newest innovations were born from the past ten years of combat, and have led us towards the implementation of greater wireless capability with digital applications down to the Soldier level. All of these initiatives continue to make our Army a relevant

"Reach back to your Signal home via any of our warfighter forums or social media conduits, and get involved in this conversation."

ready force, and our Regiment a more capable enabler. However, as a community, we need to enable change.

When you read through our professional journal, take a moment to jot down your experiences, new ideas and opinions. Reach back to your Signal home via any of our warfighter forums or social media conduits, and get involved in this conversation. I am proud of the work we have done at Fort Gordon, but it is the information we receive from the field that makes us successful. Tell us what you are thinking. Show us what you have learned. The Regiment is yours, so please, speak up—we're listening!

Join the Discussion
<https://signallink.army.mil>

Pro Patria Vigilans!



A black ink signature of Alan R. Lynn, written in a cursive style.



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Voice of the Signal Regiment

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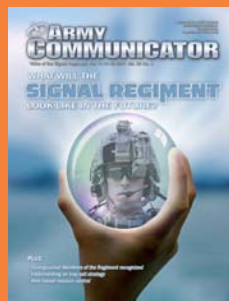
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Cover: This edition offers views from the Regiment as to what the future Signal Corps will look like and how it will operate after some of the sweeping changes of the Micro-cyber systems and training regimens are implemented.



Cover by Billy Cheney

Join the Discussion

What will actually evolve in the emerging Signal Corp Regiment is open to speculation. What is certain is that **you can have an impact.** At the end of articles where you see this icon,  you can weigh in and comment on-line.

Building the bridge to our future

Signaleers,

We are drawing near the end of the year and so this is the last edition of the *Army Communicator* for 2011. While it must be very tempting for an editor to fill such an issue with leftover articles that did not find a place in an earlier edition throughout the year, a quick glance at the table of contents indicates an edition as well written and challenging as any thus far.



I think of this edition as a bridge. It has one foot set firmly in the positive recognitions of our past. A span rises and traverses over our recently identified lessons learned. The other foot reaches out forging the vision for our future in several key areas. All three parts are critically important and have significance.

We can take pride in our past. Our Regiment has charted some very significant accomplishments. Since the release of our 150th year anniversary edition, I have tried to remain mindful of the many contributions of those who have gone before us; while remaining cognizant of the fact that we are now effectively writing the next chapters of history.

We can confidently forge a vision for our future because we have some of the smartest and most committed Signaleers who have ever stood in our ranks. During the nearly three decades of my Signal service, I have never been more encouraged than I am today.

Our Regiment is fully immersed with key Signal personnel assigned in the CIO/G-6, G-3/5/7, G-8, the Brigade Modernization Command, as well as both the 2/1 AD (which is the test brigade used in the NIE) and the 86th Expeditionary Signal Battalion (the first ESB to fall under the μ Cyber concept and transform into an ESB-Enhanced). You and I are postured, motivated and well able to press into our future the best way ahead. We have the opportunities to influence and select the technologies and methodologies giving our forces undisputed and overwhelming advantage against any adversary our nation may face.

However, God forbid we fail to learn lessons, from either past mistakes, shortcomings, or even our successes. George Santayana, in his *Reason in Common Sense, The Life of Reason*, wrote "Those who cannot remember the past are condemned to repeat it." Just over the last decade we have made a number of subtle shifts in our tactics, techniques and procedures that have aligned us precisely to make our next leap forward. Many have spent great amounts of sweat, tears, and unfortunately even some blood in this last decade. Let us not be condemned to repeat any of the mistakes due to a lack of lessons learned.

I am cautiously optimistic and unashamedly excited as we march into 2012. And as always, thank you for your dedication and service in being "Ever Watchful for Our Country."



Pro Patria Vigilans!

Everyone must help meet challenges

Signaleers,

Over the past 90 days, I have attended several conferences where “the network and its importance” to the total Army force was the common topic at each session. The Army’s senior leaders clearly understand how critically important our mission is. I take great pride in how everyone in the Signal Regiment is moving to meet the operational challenges we face every day. I also have to acknowledge all that is proactively being done by the Signal Regiment to ensure our future success.

We have embarked on the mission to expand our reach and improve our communications support to commanders and war fighters who need access to a network that is flexible enough to rapidly integrate emerging technologies and fulfill constantly changing requirements. We are in the midst of transforming the Signal Corps out of a model that has worked sufficiently in the past, into a more flexible structure that will enhance our ability to smoothly shift to keep pace with rapidly changing technology and fluid operational dynamics. We are redesigning our enlisted MOS force structure, procuring and employing more agile and capable communications packages, and most significantly, we are changing the way we train our Signal Soldiers. The end result of this process is the development of a multi-disciplined, force enabling Signal Soldier employing communications packages that exceed the expectations of our supported units.

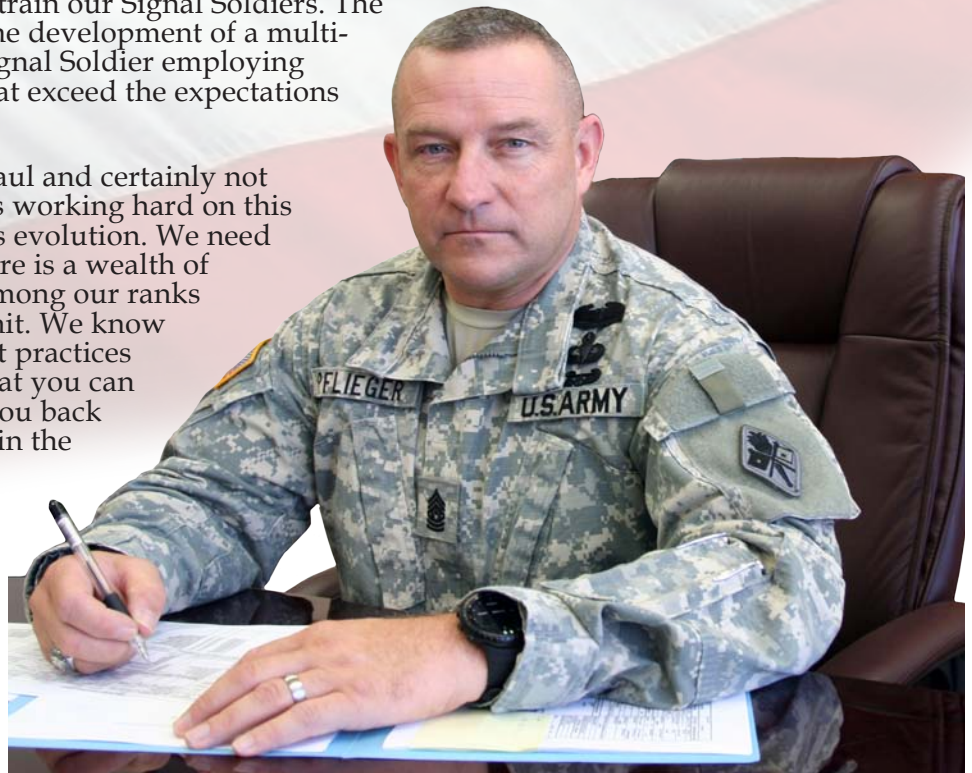
This is a top to bottom overhaul and certainly not an easy task. Our Regiment is working hard on this redesign. This is an all-hands evolution. We need your input to get it right. There is a wealth of knowledge and experience among our ranks at every level and in every unit. We know there are lessons learned, best practices and great innovative ideas that you can share. We can’t bring all of you back here to Fort Gordon to assist in the effort, but you can provide input and ideas by reaching back to the Regiment. Log on to the Signal website www.signal.army.mil or the Office, Chief of Signal website, www.signal.army.mil/ocos/default.aspx. Take a look at what we are doing and

provide some feedback. We want and need your input, so we can get **our** Signal transformation right. Message us on Facebook, or send an e-mail message to the Chief of Signal or the Regimental Command Sergeant Major.

The future of the Regiment is yours to write. I ask that each of you take the time and provide your thoughts and ideas on our transformation.

The Army’s success on the battlefield is a direct reflection of what each of you contribute each day. Keep up the great work!

Army strong, Signal proud.



Signal Corps Regiment Honors Distinguished Members

Upon Regimental activation in 1986, the Signal Corps instituted a program for the recognition of personnel who have made a special contribution and distinguished themselves in their service to the Regiment. The Distinguished Member selections are designed not only to recognize the individuals who are most notable but to promote and enhance the history of the Regiment and foster cohesion among its members. In 2011, the Chief of Signal, MG Alan R. Lynn exercised the opportunity to appoint a few of the Regiment's finest as Distinguished Members. At the Summer Signal Ball held at the home of the Regiment, seven appointments were made. At the August LANDWarNet Conference, one additional name was added.

By Office Chief of Signal Staff

CW5 (Ret) C. Andrew Barr

CW5 (Ret) C. Andrew Barr's career began in 1970 when he was drafted into the Army during the Vietnam War. His capability was quickly noticed resulting in his accession into the Army warrant officer program in less than 10 years active federal service.

In 1979, he began his warrant officer career as the operations officer for U. S. Army Communications Command in Saudi Arabia. During this period he coordinated a comprehensive upgrade of the telecommunications facilities and initiated and directed command security programs that resulted in zero security violations in the command during his tenure.

Then, in 1983, he was assigned as the officer in charge of the COMSEC Logistics Support Unit, U. S. Army Communications Command – Alaska, located at Fort Richardson, Alaska. In this position he was responsible for complete crypto-logistic support to all Army, USAR and NG units located in Alaska.

In 1988, he provided specific communications support to



CW5 (Ret) C. Andrew Barr

a unique special mission unit that supported highly sensitive missions and tasks of national significance.

From 1999 to 2004, he served as the warrant officer policy integrator in the Department of the Army G1. He was responsible for many actions during this assignment including the Army Training and Leadership Development Panel, the first comprehensive study of warrant officers in over 15 years, that focused on a variety of initiatives including pay reform, uniform insignia changes and a variety of statute and policy changes that enhanced the warrant officer

corps' ability to support the force.

He was also a survivor of the attack on the Pentagon that killed almost half of the division where he was assigned. From 2004 to 2010, CW5 Barr served as the Regimental Chief Warrant Officer for the U. S. Army Signal Corps. During his tenure as the RCWO he influenced numerous changes in the accession process which tripled the number of candidates for each vacancy for a Signal warrant. These changes included special support to the Army National Guard and Army Reserve who now receive the same relevant training as the Active component but have the ability to receive the training in phases. His influence was not limited to warrant officers. He was regularly contacted by senior officers who welcomed his advice.

CW5 Barr's awards and commendations include the Legion of Merit, Defense Meritorious Service Medal, Meritorious Service Medal (five awards), Army Commendation Medal (two awards), Army Achievement Medal, Vietnam Service Medal (two awards) and numerous other military awards including the Army Staff Badge and Recruiter Badge. He became

a distinguished member of the Regiment in 2010.

Ms. Wanda C. Butler

Ms. Wanda C. Butler's contributions to the training and education of our Soldiers and leaders has always ensured that commanders had "trained and ready" communicators.

Her career has offered a series of firsts for the Regiment starting with being in the first class of Department of the Army career interns at Fort Gordon. She was an early pioneer on the development and fielding of communications graphic training aids. These aids have served generations of communicators. She has pioneered the use of emerging technology into training and educating our communicators from the early use of tape recorders, to computer based training and today's highly realistic computer based communications equipment simulations used for training and self-development from the classroom to FOBs in Iraq and Afghanistan.

In great part due to her efforts, the Signal Center of Excellence was named the Department of Defense executive agent for satellite communications training. As a result, Sailors, Marines and Airmen attend Signal Center of Excellence training alongside the Regimental Soldiers to get the best communications training available.

Her progression through the grades from an intern to the top civilian position responsible for the development, resourcing and execution of training and education of the Regiment's Soldiers and leaders serves as a career model. As the Career Program 32 (Training, Education and War Fighting Development) manager, she has been responsible for the



Ms. Wanda C. Butler

recruitment and the education of over 70 career interns. Many of these Interns have risen to key positions throughout the Regiment.

She has also provided mentorship and guidance to our career employees, ensuring that each has opportunities to attend advanced schooling designed specifically for civilian employees, improving the overall professionalism of the civilian workforce at Fort Gordon.

As a leader, she helped establish mobile subscriber equipment training at the Signal Center of Excellence, and served as the contracting officer's representative on this contract for nearly two decades. This training produced tens of thousands of trained Soldiers and leaders who supported commanders with responsive and timely communications. As the war fighter's communications requirements evolved from MSE to the joint network node, she led the way in the development, resourcing and execution of JNN training. As a result of her leadership and drive, a process that normally takes three to five years occurred in nine months and provided trained and ready communicators to 3ID as

they executed the Army's first ARFORGEN reset.

As a Regimental visionary she expanded Regimental training from the classroom to anywhere a Soldier and leader can access a computer. Under her watch, the LandWarNet University was established and has become the Army's premier provider of PC-based training on LandWarNet. This training is accessed worldwide through both the NIPRNet and SIPRNet and has become the model for other land component forces.

It has been through her efforts and legacy that the Regiment yesterday, today and tomorrow remains "trained and ready." Ms. Butler became a distinguished member of the Regiment in 2010.

LTG (Ret) William Campbell

In the Fall of 2011, MG Alan R. Lynn, Chief of Signal, appointed LTG (Ret) William Campbell as a distinguished member of the Signal Regiment.

LTG Campbell, a native of Kaukauna, Wis., started

(Continued on page 6)



LTG (Ret) William Campbell

(Continued from page 5)

his military career as an infantry officer in 1962 after graduating from the reserve officer training corps program of Saint Norbert College in DePere, Wis. Demonstrating his vision of the future, he quickly acquired his master's degree in automated data processing from the Texas Technical University. After attending the Military Intelligence Captains Career Course, he commanded at every level, company through brigade. Of particular note was his assignment as the commander of the 335th Radio Research Company, 9th Infantry Division, in Vietnam. The 335th originated as the 112th Signal Radios Intelligence Company, which was part of the Signal Corps when formed at Camp Crowder in 1942. CPT Campbell may have been starting his career as a military intelligence officer, none-the-less he already had strong roots in Signal.

His progressive assignments as the program executive officer for command, control and communications; as the architect for Force XXI; and as the PEO for intelligence and electronic warfare systems made LTG Campbell a pre-eminent force in communications and information systems. During his culminating appointment as a lieutenant general and the Army's director of information systems and command, control, communications and computers (DISC4), his accomplishments were unsurpassed.

In an era of rapid battlefield modernization, LTG Campbell played a key role in bringing the tactical Army into the digital age. He was critical to the digitization of the 4th Infantry Division at Fort Hood, Texas; the Army's first "digitized division." His efforts enabled power projection, split-based operations and reach back; and

reduced the logistical footprint. As the DISC4, LTG Campbell also extended digitization to Army installations, transforming them into true power projection platforms. LTG Campbell directed the Army battle command system effort, to provide a tremendous amount of information to the commander and create the crucial common operating picture. Never before had the mission commander had such knowledge and power.

As the cyber age progressed, LTG Campbell led development of a plan to ensure department-wide awareness of cyber attacks. Ultimately, the Army fielded a perimeter defense capability, consisting of security routers and the centrally monitored intrusion detection systems, at all 168 Army gateways to the Defense Information Systems Network. Intrusion detection systems also were installed on approximately 500 critical servers. The system used the Army's Regional Computer Emergency Response Teams and Network Operations Centers to provide synergistic, 24-hour, centralized monitoring of the status of all networks and systems.

LTG Campbell helped pioneer the largest portal in the world. AKO serves more than two million registered users, including active duty and retired service personnel and their family members; and provides single sign-on access to more than 300 applications and services. AKO was the pivotal tool in transforming the Army to a knowledge-based organization. LTG Campbell also helped to establish the Land Information Warfare Activity. LIWA sets priorities for operations that complement the Army's Information Assurance efforts. LIWA has supported contingency operations, such as the Balkans; Force XXI initiatives; the Army Experimentation Campaign Plan; combat training center exercises;

and operational computer network defense.

These major accomplishments and many more, such as biometrics, public key infrastructure, electronic commerce and personnel policy development for those in the Information Technology arena, are still vital to today's success. It was LTG Campbell who displayed the vision and foresight to initiate so much that still serves the Army.

For these accomplishments LTG William Campbell, is appointed a distinguished member of the Regiment.

MG (Ret) Donna L. Dacier

MG (Ret) Donna L. Dacier's distinguished career spans more than 34 years of service in various, crucial positions throughout the world, both on reserve and active duty status. Her service includes assignments in Saudi Arabia, Kuwait (with service throughout the OIF and OEF theaters of war), and across the United States. She began her career in 1974 as a Women's Army Corps officer in the 4th Training Battalion at Fort Gordon, where she commanded Company C, 4th Training Battalion. She went on to serve as a combat communications division instructor for the Signal School at Fort Gordon, and later as senior instructor for the 4151st U.S. Army Reserve Forces School in Houston, Texas.

As an Army Reserve Signal force integrator, MG Dacier took a piece-meal program and transformed it into a rock-solid foundation for the Army Reserve Signal force structure we have today. Because the Signal community was never fully resourced and provisioned, MG Dacier demonstrated her skills as a keen and astute negotiator. She collaborated with Department of the Army training and readiness



MG (Ret) Donna L. Dacier

staff and shifted fiscal resources to the Army Reserve.

While assigned as the senior officer to the 335th Theater Signal Command forward Riyadh, Saudi Arabia in 1997, MG Dacier had the vision to merge the DISA and Joint Service Signal Network Operations Centers into a joint entity.

In our current conflict as the C6, coalition forces land component command and commander of the 335th Theater Signal Command (Provisional), at Camp Doha / Arifjan, Kuwait, she oversaw the monumental task of commercializing the command, control, communications, and computer infrastructure across Iraq, Afghanistan and Kuwait. Her actions freed up critically needed tactical assets and provided an unprecedented level of network support to a combined U.S. military, U.S. Department of State, and NATO customer base of more than 100,000 war fighting personnel.

Selected as commander, 311th Signal Command at Fort Meade, Md., she was again called upon to tackle a new and difficult transformation to redesign her command into a multi-component headquarters and move it 5,000 miles to

Fort Shafter, Hawaii and migrate from a reserve centric organization to an operationally focused command. Her command would assume C2 over a multi-million dollar C4I operation dedicated to sustaining joint war fighters throughout the pacific region and transition the communications infrastructure into a global enterprise. After retirement, her service to the regiment and our country continued when she joined BCP international, Ltd., as a senior defense analyst, with oversight programs for national, state and local governments. Throughout her career, MG Dacier worked hard at networking with people not just in the Signal community but also throughout the Army. MG Dacier deemed it critical to talk constantly to the "customer" to ensure customer needs were satisfied and to increase trust in the Signal community enterprise services provided. She is a true leader of Soldiers of all ranks and always mindful of the people who served with and for her--a true champion of humanitarianism. She became a distinguished member of the Regiment in 2010.

COL (Ret) Pete Farrell

COL (Ret) Pete Farrell's military career started in 1975 upon graduation from the U. S. Military Academy at West Point, where he was commissioned into the U.S. Army as a second lieutenant in the Signal Corps. He spent the next 27 years on active duty serving with distinction as a tactical Signal officer around the world. Some of his key assignments included: serving as a platoon leader along the Inter-German Border in West Germany at the height of the Cold War; company commander in the 82nd Airborne Division at Fort Bragg, N.C.; faculty member at

the U. S. Academy at West Point; service at NATO Headquarters in Brussels, Belgium during the fall of the Berlin Wall, and battalion commander 501st Signal Battalion, 101st Airborne Division (Air Assault) at Fort Campbell, Ky.

In 1997, COL Farrell was charged with the responsibility of the establishment of our own Signal Corps Regimental Association as a true private organization. He formed our first SCRA Board, established a manager's position and instituted a fair and equitable awards program. He was personally responsible for the reinvigorating the SCRA. As the 15th Signal Brigade commander, COL Farrell commanded our largest brigade. He was responsible for training of thousands of our Soldiers who are succeeding, even excelling, today because of his personal efforts to ensure our Regiment had the finest trained Soldiers possible.

His military service culminated in June 2002 as the deputy commander of the U. S. Army Signal Center at Fort Gordon. In this capacity, one of his

(Continued on page 8)



COL (Ret) Pete Farrell

(Continued from page 7)

significant accomplishments was the implementation of the assignment oriented training program. This initiative which separated Soldiers into tracks of training based upon their first unit of assignment both saved the Army millions of dollars in resources and it also ensured that our Soldiers received exactly the training they needed prior to being assigned to their first duty station. Since joining General Dynamics as the director of training, COL Farrell has continuously sought ways to better support Signal training, both at the resident schoolhouse, and during new equipment training throughout the force as the various increments of the Warfighter Information Network – Tactical are fielded. COL Farrell has seen the establishment of video enabled training within the schoolhouse, making resident training available anytime and anywhere. This capability was demonstrated through training links to both Puerto Rico and Iraq. Though retired from active duty, COL Farrell continues serving the Regiment through his efforts in his current civilian employment.

As part of his community service, COL Farrell serves on the Fort Gordon Post Retiree Council, a volunteer agency that represents the interests and needs of veterans in the Fort Gordon area and presents these needs to the installation for resolution. He became a distinguished member of the Regiment in 2010.

CSM (Ret) Ray D. Lane

CSM (Ret) Ray D. Lane entered the U.S. Army from West Palm Beach, Fla. in 1976 through the delayed entry program. After a break in service, he rejoined the Army in 1980 after becoming the top graduate of the National Association for Home



CSM (Ret) Ray D. Lane

Builders.

Prior to becoming the command sergeant major of the Army Communications-Electronics Life Cycle Management Command, CSM Lane served as command sergeant major for the 160th Signal Brigade. He was the top enlisted Signal adviser for Operation Iraqi Freedom, Coalition Joint Task Force-Seven, Task Force Signal, and the 22d Signal Brigade, during V Corps' decisive victory. CSM Lane served in the region for three years, overseeing every aspect of commercialization.

Other key leadership assignments included command sergeant major, 440th Signal Battalion; G6 sergeant major, 1st Armored Division; first sergeant, Bravo Company 141st Signal Battalion and Delta Company, 1st Battalion 46th Infantry Regiment; communications chief, Second Battalion, third Field Artillery Regiment; Signal officer (S6), 12th Cavalry Regiment; senior drill sergeant, and squad leader.

Additionally, CSM Lane served with the 1/31st Mechanized Infantry, 2/10th Towed Artillery, Jungle Operation Training Center, Jungle Warfare Branch, 2/51st Air Defense Artillery, 84th U.S. Army

Field Artillery Detachment Lance (Nuclear), 69th Signal Battalion, and 52d Signal Battalion.

CSM Lane's overseas assignments include five tours in the Federal Republic of Germany; a tour in Panama, Bosnia, Korea; two tours to Kuwait and Iraq. His stateside assignments included Fort Riley, Kansas; Fort Benning, Ga.; Fort Knox, Ky.; and Fort Monmouth, N.J.

His awards and decorations include the Legion of Merit, (with one Oak Leaf Cluster) the Bronze Star, Meritorious Service Medal, (with four Oak Leaf Clusters) the Army Commendation Medals (with two Oak Leaf Clusters), the Army Achievement Medals (with five Oak Leaf Clusters), the Drill Sergeant Badge, both Order of Mercury and Honorable Order of Saint Barbara Medals, the German Marksmanship Badge and the Combat Action Badge.

He was an honor graduate of advanced individual training, Basic Noncommissioned Officer's Course, and the Advanced Noncommissioned Officer's Course. He was a graduate of Class 48, U.S. Army Sergeants Major Academy, the Command Sergeants Major Course, and the Master Fitness Course. CSM Lane graduated from the University of Maryland with an Associate of Arts degree and a Bachelor of Business Administration Degree from McKendree College, with an emphasis on management and computer science.

CSM Lane spearheaded the start of the Baghdad Signal University and began the initial thought process of the Mobile Training Team direction that the entire Army now utilizes. He was inducted, posthumously, as a distinguished member of the Signal Regiment in 2010.

CSM (Ret) Michael A. Terry

CSM (Ret) Michael A. Terry entered active duty in October

1973. He attended basic training at Fort Leonard Wood, Mo., and advanced individual training for MOS 05C, at Fort Gordon, Ga. He was the post and Regimental command sergeant major for the U. S. Army Signal Center and Fort Gordon, from November 2002 until October 2007.

His assignments included 124th Signal Battalion, Fort Carson, Colo.; U.S. Army Recruiting Station, Davenport, Iowa; 1/36th F.A., Augsburg, Federal Republic of Germany; U.S. Army Electronics Proving Ground, Fort Huachuca, Ariz.; 125th Signal Battalion, Schofield Barracks, Hawaii; 10th Signal Battalion, Fort Drum, N.Y.; 142nd/124th Signal Battalion, 16th Signal Battalion, and 3rd Signal Brigade, Fort Hood, Texas; 516th Signal Brigade, Fort Shafter, Hawaii; and 5th Signal Command, Mannheim, Germany.

CSM Terry has held every leadership position from team chief to command sergeant major. He has deployed to real-world situations three separate times — Hurricane Andrew in Homestead, Fla., and two deployments to Somalia during operations Restore Hope and Continue Hope.

His awards include the Legion of Merit, Meritorious Service Medal with two oak leaf clusters, Joint Service Commendation Medal, Army Commendation Medal with three oak leaf clusters, Army Achievement Medal, Good Conduct Medal (eighth award), National Defense Service Medal with star device, Joint Meritorious Unit Award, United Nations Medal and Humanitarian Service Medal. Badges earned are the Army Recruiter Badge with two gold stars, the Air Assault Badge and the Silver Order of Mercury. CSM Terry's military education includes Recruiting School, Advanced Noncommissioned Officer's Course, Master Fitness Course, First Sergeant Course and the Sergeants Major Academy. He currently holds an associate's degree from City University



CSM (Ret) Michael A. Terry

of Chicago and completed his bachelor's degree in 2010. CSM Terry is married to the former Virginia Bennett, his high school sweetheart. They have two sons and eight grandchildren. He became a distinguished member of the Regiment in 2010.

Mr. Marty Zimmerman

Mr. Marty Zimmerman graduated from the U.S. Army Military Academy at West Point in 1956 and was commissioned in the U.S. Army Signal Corps. He served in a variety of military and civilian assignments before his career culminated with his appointment as the Army's deputy chief of staff for command, control, communications and computers.

During his career Mr. Zimmerman was a visionary in the development of information systems. Early in his career he helped validate the use of commercial computers in the field, saving millions in costs and keeping the Army supplied with top of the line technology. He developed the spiral development model for software systems, ensuring that Soldiers could give their feedback, an approach that is still the Army standard. In addition to his

technical expertise,

Mr. Zimmerman has both acquisitions savvy and is influential with Congress. His reputation earned him the confidence of his superiors, and he was asked to represent the Army in several international negotiations on information technology. He was involved in numerous other IT actions over his career, ranging from support to the Corps of Engineers, IT support to Redstone Arsenal and Army Materiel Command and activities within the Tactical Air Naval Ground Operations Center, the Underground Command and Control facility in Korea.

Mr. Zimmerman's contributions to the Regiment also include the professional development of future senior civilian IT leaders. He headed the Army's functional civilian personnel system for IT for his entire senior executive career. He has not only established policy for the career program, he also personally reviewed the proposed promotion of GS 15S worldwide. His dedication and strong service ensured Soldiers had the best network and IT systems available.

He became a distinguished member of the Signal Regiment in 2010.



Mr. Marty Zimmerman

*The opinions and comments expressed in **Lima Charlie!** are those of the authors of the letters or e-mails. Publication here does not constitute endorsement by the Department of Defense, U.S. Army, or Chief of Signal. Articles are edited for basic grammar and operational security. Otherwise what you see is what was written. You are encouraged to send letters to the editor as a catalyst to healthy debate that moves the Signal Regiment forward. Include your name and contact information and send Letters to the Editor to at ACeditor@conus.army.mil.*

Work Above and Beyond

Dear Editor,

I am pleased to inform you that I did get the Army Communicator package you sent me. It was awesome to receive the 150th commemorative edition along with the Knowledge Management and Micro-Cyber issues I requested and the book about the Signal Regiment. You went above and beyond my expectation. I look forward to the next issue in December 2011.

Thanks again and God Bless.

LT Julius N. Lee Jr. USAREUR

“...the task of KM from BCT through ASCC is not the sole domain of a single branch or functional area. Rather, it is a team of professionals working in concert to improve situational awareness and decision-making.”

--LTC Joseph Nolan--

True Knowledge Managers Article Missed the Mark

Dear Editor,

Thank you for the opportunity to respond to LTC Alprentice Smith's "The Army's true knowledge managers" article in the Summer 2011 edition of Army Communicator magazine. While I appreciate LTC Smith's pride in Functional Area 53 – Information Systems Management, I have to respectfully disagree with his characterization of Functional Area 57 – Simulation Operations officers and their role in operational-level Knowledge Management. KM, as LTC Smith correctly defines, is the nexus of integrating people, process and technology to increase human performance. However, the task of KM from BCT through ASCC is not the sole domain of a single branch or functional area. Rather, it is a team of professionals working in concert to improve situational awareness and decision-making. Across the Army, FA57s, FA53s, and FA24s (Telecommunications Systems Engineers) work in a mutually supporting manner to enable KM for the commander and staff. No one group is able or fully trained to do this critical task alone. Just as Infantry, Armor, Artillery and Aviation are the back bone of the combined arms team, the team of FA57s, FA53s, and FA24s serve as the back bone for KM. It is a team effort.

Senior Army Leadership from LTG Daniel Bolger, Deputy Chief of Staff G-3/5/7, to MG Anthony Cucolo, former 3rd Infantry Division Commander to Gen Peter Chiarelli all see the value of FA57's role on the KM team. GEN Chiarelli stated in an interview for our 2010 FA57 capabilities video that:

"It'll be the FA57 that will be able to recommend to the commander how to pull those different pictures (Army Battle Command Systems) – that different amount of knowledge – together



and provide the most coherent picture for his chain of command.”

The FA57 officer receives a great deal more training on KM fundamentals besides the 4-week Knowledge Management course run at the Combined Arms Center and School, Fort Leavenworth, KS, that LTC Smith references. FA57s attend a 6-week qualification course where KM principals are nested throughout the program of instruction. They also attend a 2-week Battle Command Officer Integration Course to further gain an understanding of ABCS. In addition, FA57s are one of the few functional areas to attend the 46-week ILE and Advanced Operations and Warfighting Course at Fort Leavenworth. This course provides FA57s with the fundamental framework for mastering the staff process. FA57s understand how the staff operates boards, bureaus, centers, cells and work groups (B2C2WG) as well as the information requirements to feed these functions. FA57s master this process as it is the foundation for model and simulation selection to support training.

With almost 58 weeks of training, FA57s do in fact have the necessary knowledge, skills, abilities and experience to serve successfully on the KM team. FA57 training runs the breadth from understanding mission command systems providing the commander and staff digital information from the battlefield to the staff processes and B2C2WGs that bring it all together. It is more than information management repackaged.

KM teams from the division through ASCC retain the O2A (branch immaterial) officer on their units' modified table of organization and equipment primary based on feedback from the field. Commanders, from division to corps to ASCC, want to retain selection of this critical staff lead. This senior O2A, ordinarily a combat arms officer, provides feedback to the KM team on emerging needs of the commander and provides support for interacting with staff principals. One of the challenges that KM officers face in the field is gaining confidence and support from the staff. The O2A officer serves as that interface between the commander, staff and the KM team to keep doors

open across the division, corps or ASCC.

Recently, as commanders and staffs become more comfortable with the role of the KM team, some units have begun to seek out an FA57 as their KM lead.

KM is not a sole function of a single staff officer or branch any more than stating that the artillery alone can win wars. KM is a solid team effort with each member bringing unique skills to bear on this difficult challenge. Enabling the commander and staff to find the nexus of people, process, and technology is the role of the KM team. A team composed of O2A combat arms officers, FA57s, FA53s, FA24s, contractors, and civilians working together at all levels to improve understanding and decision-making of the warfighter.

LTC Joseph Nolan has served as a Functional Area 57 – Simulation Operations officer since 2003, after serving in the Infantry for 10 years. He has served in various assignments to include USCENTCOM and USPACOM exercise planner, USJFCOM Battle Command officer deployed to OIF as a lead planner for the restructuring of the USF-I staff for USCENTCOM, and Chief, USJFCOM Joint Advanced Training Technologies Laboratory charged with development of models, simulations, and architectures to support Joint, COCOM and Service training requirements. He is currently assigned as the FA57 Personnel Development officer, HQDA G8.

Embracing the SASMO Mission

(Editor's Note--The following letter was written in response to an Army Communicator article, entitled "Signal Life in the Logistic Lane.")

Every Signal Soldier should understand that logistics systems are supported by the Signal community. The SASMO section is not a happenstance cluster of Soldiers thrown together to support random logistics systems. Instead it

(Continued on page 12)

Embracing the SASMO Mission

“We must not confuse what we would like to be doing with what is required of us all.”

--CW3 Niky Frazier--

(Continued from page 11)

is a well organized group of subject matter experts from multiple military occupational specialties. Concerns about manning and lack of personnel appear to be directly related to a lack of command emphasis and support of the SASMO mission. Upcoming MTOE updates will remove the 53A from the SASMO and put the 251A firmly in charge of the section.

Decision Briefs and Management Skills

I routinely receive phone calls from junior warrant officers complaining about the lack of personnel in their sections. When questioned, they almost always state that the CSM/SGM told them they weren't getting any more Soldiers. Most of these young warrant officers have accepted this answer and suffered the consequences of trying to accomplish their mission at 20%-30% manning. I am not encouraging young officers to override or ignore senior NCO leadership, but I am advising you to prepare a decision brief for your commander to discuss how the lack of personnel impacts your mission. Meet with your S-1 to discuss your MTOE along with future gains and losses. If the unit is fully manned, then your Soldiers have boots on the ground and you need to find out why they are not in your section. You may not get your full manning, but those of you deployed with only 30% of your

Soldiers should be outraged. The Warrant Officer Career College or WOBC at Fort Gordon should place more emphasis on teaching young officers to prepare and present decision briefs and presentations. We are more than technicians. It is necessary for us to lead and manage our personnel and mission. Stop looking for a memo or regulation to defend your position and articulate your requirements with solid justifications. You should have a permanent seat at the table when the meetings begin. If not, everything will be decided for you. If you refuse to position yourself to be a part of the decisions, then you must accept the outcomes without complaining.

Training and Support

The Army Logistics University offers a SASMO course at Fort Lee. This course is designed to train SASMO personnel on the systems they are required to support. It provides students with training in the areas of computer systems hardware, operating systems, Logistics-IT applications: ULLS-A, SAMS-E, PBUSE, SARSS (including RF/AIT), SAAS Mod, TCAIMS II, MC4, MTSU, systems interfaces, systems networking, troubleshooting, communication protocols, and the use of VSAT/CAISI. Unfortunately, lack of unit emphasis has prevented SASMO personnel from attending this much needed training. The SASMO OIC must articulate the

need to attend training to their command. While there may be some difficulty in getting the entire section to SASMO training, every effort should be made to get everyone trained.

The LAR and FSR are readily available when needed. They are an extremely responsive group dedicated to helping and supporting the mission. I am guilty of not always utilizing their expertise and I have sometimes struggled through a problem when the LAR/FSR already had a solution.

MOS Stir-Fry

The 251A is not a temporary presence in the SASMO. As previously mentioned, they have never been more firmly planted in the SASMO as they are today. The loss of the 53A puts the 251A in the challenging position of being a technician and a leader simultaneously. The SASMO is absolutely a career enhancing position. The section is filled with automation equipment that includes networking devices and satellites. Who should manage

these devices? The answer is very simple, signal warrant officers and Soldiers. While there may be more preferable assignments, a mature warrant officer must accept the SASMO mission as a valid signal mission that deserves the time and attention of those entrusted with it. The opportunity to manage personnel, coordinate with external sources and interact with the unit staff are training opportunities that cannot be overlooked.

Planning missions, maintaining and accounting for fully capable equipment, establishing SASMO policy within the command, and managing a budget are skills that translate across the Army.

Embrace the Mission

When a Blackhawk pilot moves from one duty station to another he/she is not required to retrain because a Blackhawk is a Blackhawk no matter the geographic location. When a Signal warrant officer relocates he/she must find out what systems are being used then

learn and eventually improve upon the systems to ensure mission accomplishment.

So we don't hit the ground running like a pilot, but we possess the skills to quickly adapt to our environment to ensure that our commands trust that we possess the technical and leadership skills to execute our mission.

We must not confuse what we would like to be doing with what is required of us all. Embrace the SASMO mission.

CW3 Niky Frazier is currently assigned as the communications combat developer (VSAT/CAISI/SASMO) at Combined Arms Support Command (CASCOC), Fort Lee, Va. Previous assignments include positions as SASMO, S-6 and ACDD commander. She holds a master of Science in information assurance from Norwich University, a bachelor of science in computer science from TUI, and two associate degrees in technology and arts from Pierce College. She has 19 years of service in the Signal Corps.

ACRONYM QuickScan

ACDD - Automated Cargo Documentation Detachment

CSM - Command Sergeant Major

FSR - Field Support Representative

LAR - Logistics Assistance Representative

MTOE - Modified Table of Organization and Equipment

NCO - Noncommissioned Officer

OIC - Officer in Charge

SASMO - Sustainment Automation Support Management Office

SGM - Sergeant Major

SME - Subject Matter Expert

WOBC - Warrant Officer Basic Course

Knowledge management important training priority

Editor's note: In follow-up to the discussions of Knowledge Management featured in the Volume 36 No. 2 Summer 2011 edition of the Army Communicator, proponents from the U.S. Army Training and Doctrine Command offer their perspective on the subject.

**By Joseph Oebbecke
and MAJ Michael Flatoff**

Army knowledge management is especially critical in empowering senior decision-makers in both the operating and generating forces.

Knowledge Management is the art of creating, organizing, applying and transferring knowledge to facilitate

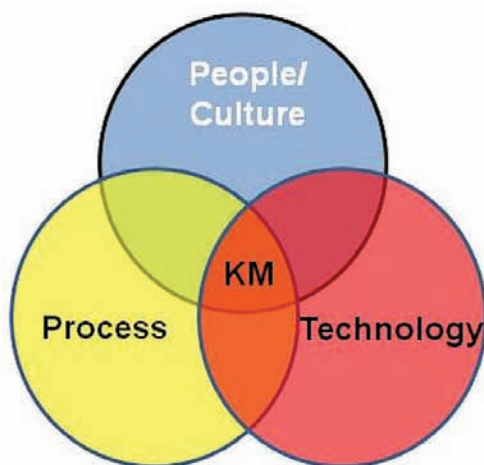
situational understanding and decision-making. Relevant, actionable knowledge is essential for effective operations in an operations environment. It is also required for effective development and delivery of doctrine, training and education, and ensuring the availability of required capabilities now and in the future.

The value of KM relates directly to the effectiveness with which managed knowledge enables the members of an organization to deal with today's situations and effectively envision and create their future. KM is about the journey of information as it moves from inception to user. KM has

informally been in use in many major corporations and entities for decades. From its most basic form which may be as simple as on the job discussions to more formalized training and mentoring programs, KM has long enabled the dissemination of explicit and tacit knowledge along with intellectual capital in many forms across many venues.

KM became widely popular in the early 1990's after its introduction in many successful companies around the world as a means to improve business processes and enhance business outcomes.

The KM transformation process began overseas when companies including Honda



People/Culture Dimension

Principle 1 – Train and educate KM leaders, managers, and champions.

Principle 2 – Reward knowledge sharing and make knowledge management career rewarding.

Principle 3 – Establish a doctrine of collaboration.

Principle 4 – Use every interaction whether face-to-face or virtual as an opportunity to acquire and share knowledge.

Principle 5 – Prevent knowledge loss.

Process Dimension

Principle 6 – Protect and secure information and knowledge assets.

Principle 7 – Embed knowledge assets (links, podcasts, videos, documents, simulations, wikis...) in standard business processes and provide access to those who need to know.

Principle 8 – Use legal and standard business rules and processes across the enterprise.

Technology Dimension

Principle 9 – Use standardized collaborative tool sets.

Principle 10 – Use Open Architectures to permit access and searching across boundaries.

Principle 11 – Use a robust search capability to access contextual knowledge and store content for discovery

Principle 12 – Use portals that permit single sign-on and authentication across the global enterprise including partner

Illustration 1: People/Culture, Process and Technology

and Canon realized the value of knowledge and sharing it across its workforce. "Managers at these companies recognize that creating new knowledge is not simply a matter of mechanistically processing objective information. Rather, it depends on tapping the tacit and often highly subjective insights, intuitions and ideals of employees," according to Ikujiro Nonaka, a professor of business from the University of California Berkeley who studied KM.

Knowledge Management in Action

A decade ago, the Army realized that to maintain its war fighting edge it needed to quickly disseminate information and lessons learned across its vast array of operating and generating forces. In the mid-90s Army KM policies were developed by the Army G3 Battle Command Directorate and the Army CIO/G6 in the form of AKO Memoranda. These provided broad guidance and created the beginnings of an institutional framework to deliver just-in-time training as well as the beginnings of Army knowledge networks in the form of Battle Command Knowledge System. To institutionalize a broader Army KM effort, the Army published the Army Knowledge Management Principles in July 1998 to provide a framework for war fighters and the institutional Army to "help preserve tacit and explicit knowledge and accelerate learning as units and personnel rotate in and out of theaters or organizations."

Army leaders realized that "without consistent strategy and policy, units and commands will generate islands of information and knowledge inaccessible to others." This would be disastrous from an enterprise perspective according to the Army KM Principles. The reason being "in multi-disciplinary, multi-organizational, and joint military environments, those who innovate, learn, rapidly adapt, and act decisively will prevail against adversaries," according to the Army KM Principles.

The Army KM principles provide authoritative guidance to Army commands and organizations developing or engaging in knowledge management efforts (See Illustration1 on the preceding page). The principles are grouped into three categories; people, processes and technology.

Early KM in the Army and TRADOC's Initial KM Efforts

The foundation for KM in TRADOC began in 2005 with the Office of the Secretary of Defense Training Transformation initiative that set goals for providing more comprehensive Joint training and education to individuals and units. The KM effort

for individuals was called the Joint Knowledge Development and Distribution Capability and the unit program was called the Joint National Training Capability. At the same time, TRADOC began realigning its functional centers and schools into centers of excellence. Integral to these CoE's were two critical staff elements called KM cells and Lessons Learned Integration Cells linked to the Army Center for Lessons Learned. The Commanding General of TRADOC believed that each of these CoEs had to become more effective in collecting, analyzing, and distributing the knowledge gained by the operating force and feeding that knowledge back into the training base to enhance the training experience of the warfighter.

In 2007, CG TRADOC directed a six-month independent study of Information and Knowledge Management practices within TRADOC, which resulted in forming the TRADOC Chief Knowledge Office and developing the TRADOC KM Strategic Plan. This plan posited that "TRADOC Knowledge Management facilitates situational understanding and decision making through the art of creating, organizing, applying, and transferring knowledge," according to the TRADOC KM Strategic Plan.

TRADOC adopted the twelve Army KM principles with minor modifications. This allowed for an enterprise approach for all of the TRADOC's KM activities. First Army KM was given the mission of "establishing a culture that creates, organizes, applies and transfers knowledge to all Army Forces," according to the TRADOC KM Strategic Plan. With a vision of the future being "A knowledge-enabled force – one learns, everyone knows," according to the TRADOC KM Strategic Plan. TRADOC could then codify KM as a key capability in performing its mission and to support the TRADOC CG priorities.

KM became a key enabler supporting TRADOC's lines of operation across DOTMLPF domains, (Doctrine, Organization, Training, Material, Leadership and Education, Personnel and Facilities.) "KM conceptual framework guides development of collaborative knowledge creating and sharing communities, e.g. Warfighter Forums," TRADOC KM Strategic Plan.

Based upon the mission and vision of GEN Martin E. Dempsey, TRADOC commanding general, the TRADOC chief knowledge officer, in collaboration with the TRADOC Center of Excellence, nested the TRADOC KM Strategic Plan and Implementing tasks within the TRADOC Campaign Plan for 2009, and subsequent TCPs. The strategic plan focuses on Soldier Learning,

(Continued on page 16)

enhancing TRADOC wide processes, and supporting TRADOC Staff and Mission Command CoE.

TRADOC's Ongoing KM Efforts

With KM supporting the broad functions across the DOTMLPF the MSOs and CoEs created a series of major TRADOC KM initiatives to support the TCP. While KM is a key enabler across all TRADOC Themes, there are three Themes where KM will have the most significant impact as a key enabler. These are Army Training Strategy, Institutional Adaptation, and the Army Learning Concept 2015.

Foremost, the paradigm shift for Soldier learning outlined in TRADOC PAM 525-8-2, The Army Learning Concept 2015 (ALC) was in the KM "sweet spot." Linked to the Army Training Strategy, the ALC proposes a "continuous adaptive learning model, a framework comprised of elements that together create a learner-centric, career-long continuum of learning that is continuously accessible and provides learning at the point of need in the learner's career," according to ALC 2015 TRADOC PAM 525-8-2.

KM within the ALC "converts classroom experiences into engaging problem-solving events to facilitate development of critical thinking skills and improved decision making," according to TRADOC KM Strategic Plan. "Essential to achieving the vision of the continuous adaptive learning model is developing the supporting learning infrastructure that includes building knowledge management enabling capabilities, systems, and networks; workforce skills; facilitator training courses; resourcing models; digitized learning resources; policies and processes; and administrative tools," ALC 2015- TRADOC PAM 525-8-2.

"TRADOC KM provides the foundation of a learner centric, lifelong learning support system through its production capabilities, content management and personal web portals," according to the KM Strategic Plan.

Furthermore production capabilities allow it to "rapidly develop and update relevant, engaging digital learning content incorporating intelligent tutoring, gaming, video, and evidence-based learning methods," according to the KM Strategic Plan. Key to this is its ability to manage the content from the production and its subsequent delivery through the portal to various digital learning mechanisms, apps, performance support aids, social networks and emerging technologies.

Knowledge Management Challenges

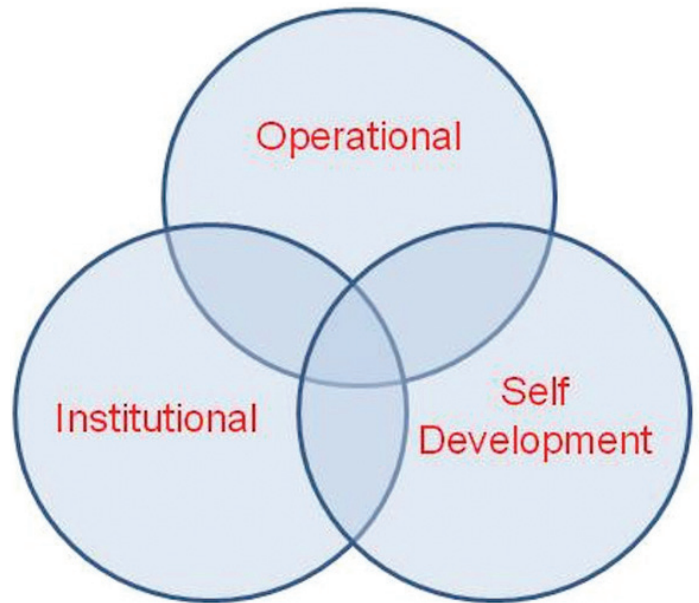


Illustration 2: Operational, Institutional and Self Development

Introducing a transformational idea and delivering on its promise of efficiency, economy and opportunity does not come without its challenges. While there are many, those that create the greatest test of the organizations willingness to transform are discussed below.

Challenge Number 1 – Change Management

Knowledge Management within TRADOC faces a wide array of challenges from all levels of operation. The most encompassing hurdle is change management and aligning the KM functions within the Major Subordinate Organizations. Overcoming change or internal resistance to altering a person's work, behavior and focus is not easily done. As part of its plan to overcome this TRADOC found that the "Critical elements to ensure successful, long-term change include vision, value proposition (benefits), strategy, resources and an action plan" according to the TRADOC KM Strategy. In order to meet these needs the Knowledge Management Strategic Plan was formulated using the CG's vision and Lines of effort as major drivers.

The TRADOC KM Strategic Plan clearly outlines KM's roles and responsibilities, focus and initiatives as well as identifying key stakeholders throughout the organization. When this document is combined with KM business plan it will allow -"TRADOC's CKO office and the CKOs and KM groups at the MSOs and CoEs will need to create awareness and build advocacy for those initiatives throughout TRADOC," according to the TRADOC KM Strategy. Furthermore, "These individuals and

groups must leverage the support of the TRADOC CKO, DCG, CG, and other key stakeholders to provide visible, and required, support for KM in order to change behavior and support new ways of working across TRADOC,” according to the TRADOC KM Strategy.

Challenge Number 2 – Content Management

Another challenge for TRADOC KM is managing the content as well as the technology used to interface with the target audience. Within TRADOC there is a wide diversity of content. There is information coming from current operations, training operations and other alternative venues. There is a vital need to ensure that a consistent and structured approach is taken to facilitate the transfer of knowledge and the location where it is held. Content management is addressed through the use of data managers. “These data managers will help in the full implementation of the Army Data Transformation Plan, with an eventual goal of establishing a net-centric data environment where the right info can be delivered to the right person at the right time,” according to the TRADOC KM Strategy. Technology provides the medium through which TRADOC KM communicates and manages content. “Technology, when introduced at the right time to the right people, can be a very powerful medium for improved learning, increased collaboration and productivity, and improved organizational performance,” according to the TRADOC KM Strategy. The key is identifying the right technology to support collaboration and knowledge sharing throughout the organization and maintaining interoperability.

In 2007 TRADOC conducted the War fighter Survey, as part of the Knowledge and Information Management in the Generating Force Study, and found approximately 2 percent of shared knowledge is made accessible to the broader Soldier community. Three other key facts were also ascertained: 90 percent of repositories support some level of search, yet 48 percent of Soldiers rated an effective search function as the primary knowledge-sharing constraint; Twice as many Soldiers contribute Observations, Insights, Lessons (OIL) (51%) as Soldiers who search for OIL (28%); and 47 percent of Soldiers would like to search more but do not have enough time (26%) or feel the process is very difficult (21%).

Challenge Number 3 – Using KM to Train

These numbers provide an insight into another

challenge that TRADOC KM faces. That challenge is “creating a process to provide consistent and systematic KM training and education will ensure that it reaches the majority of stakeholders while also enabling TRADOC’s KM office to maximize economies of scale,” according to the TRADOC KM Strategy.

TRADOC also found itself competing to ensure that it could develop equitable staffing and resourcing of KM across TRADOC MSOs and CoEs as well as identifying gaps to meet requirements and mission needs. Key to this was its ability to communicate and use its KM governance structure. “TRADOC’s KM governance structure will be the key enabler for identifying appropriate messages and related audiences for communication regarding the KM initiatives throughout their design and implementation, as well as sustaining the KM program,” according to the TRADOC KM Strategy.

Challenge Number 4 – KM Governance

There are three levels of governance within TRADOC. First there is the CKO which provides insight and integration into the TCP as well as ALC, and ATC. There is also the TRADOC Knowledge Management Council which is comprised of the Knowledge Management Officers from the KM Cells within TRADOC. Currently TRADOC has approximately 14 KM Cells spread out across its various commands. These include Army Accessions Command, Initial Military Training, Combined Arms Center, Army Capabilities Integration Center, Sustainment, Army Medical Department CoE, Fires CoE, Maneuver CoE, Maneuver Support CoE, Aviation CoE, Intelligence CoE, Signal CoE, Army Training Support Center and Army War College. TRADOC KM governance utilizes a diverse set of capabilities to maintain constant input and refinement from the bottom up. Not only does it utilize the TKMC but holds KM forums to discuss various issues and ensure unity of message across its diverse commands.

Challenge Number 5 – Sharing Best KM Practices that support Organizational Adaptation

Perhaps the best explanation of KM and its use comes from Gen. Martin E. Dempsey, TRADOC commanding general, in his remarks to the 5th annual Army Operational Knowledge Management Conference in October 2010.

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“Knowledge management is a tool that will enable us to more effectively deal with uncertainty and the rapid pace of change. It will enable us to successfully decentralize by providing the means to aggregate information and intelligence from that empowered edge. Knowledge management will also enable us to prevail in the competitive learning environment and ultimately adapt more quickly than our adversaries. Why? Because it brings together processes and people enabled by

technology speed and accessibility to create the context for exchanging individual and collective information and experience.”

KM has also proved instrumental in the development and use of Warfighter Forums. There are 15 active forums dedicated to various cohorts across the Army. Each forum acts as a focal point for information dissemination as well as a collaborative meeting space where issues pertinent to each cohort can be discussed. Information right from the front lines can be passed along to those about to deploy. The rapid integration of



SKN & Sustain WfF within Training & Leader Development Not Just Training KM...Using KM to Train

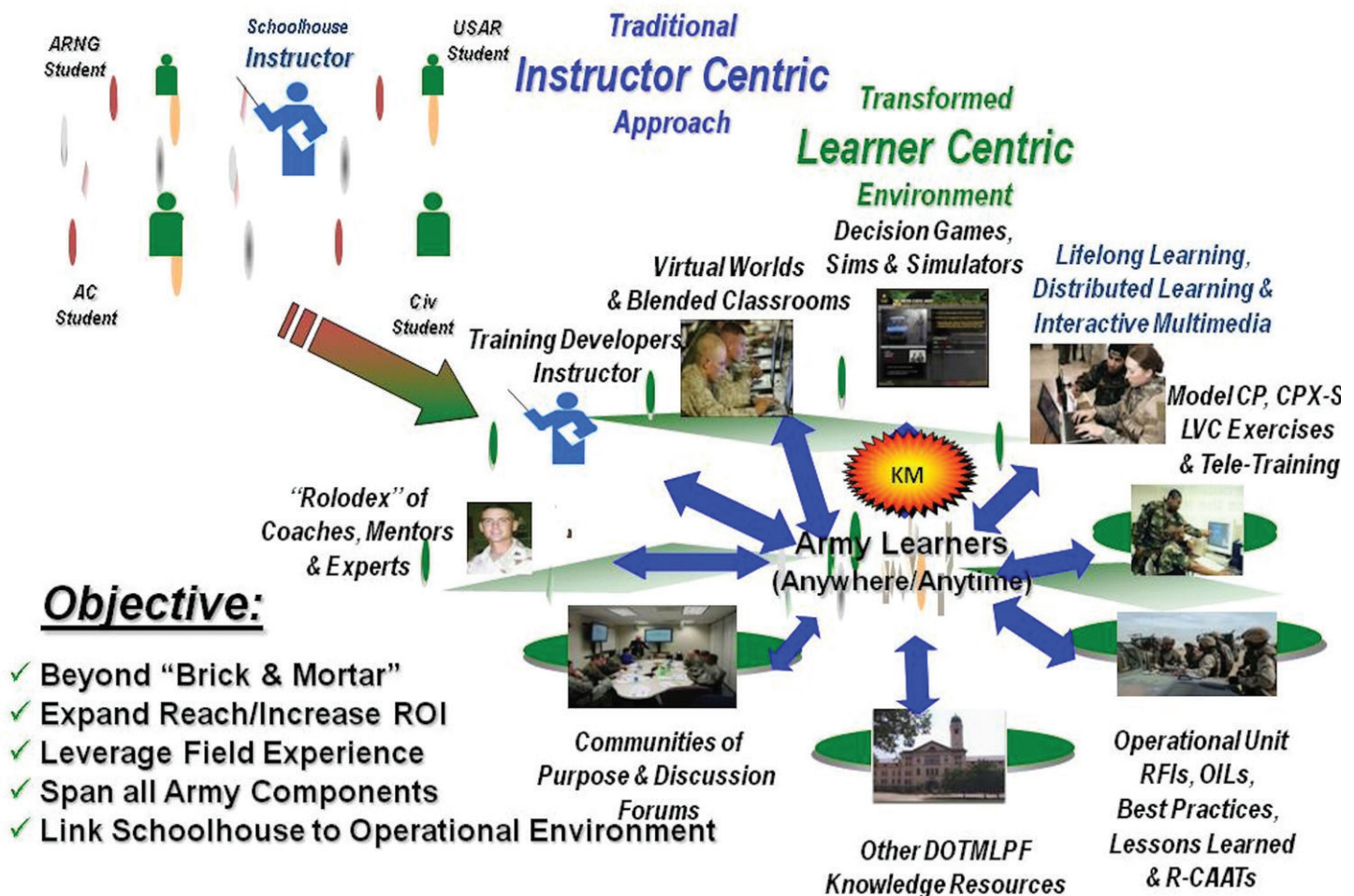


Illustration 3: Not Just Training KM....Using KM to Train

knowledge dissemination can occur in as little as a few keystrokes. GEN Ann E. Dunwoody, commanding general of U.S. Army Material Command, encouraged the use of forums as a method to adapt Army culture and institutions.

“Warfighter forums offer excellent opportunities for communication, collaboration, and coordination of the Army’s support to our warfighters. I encourage maximum participation as we work together to sustain, prepare, reset and transform our products and processes. Each member of the Army team can take an active role in the effort to adapt our culture and institutions as we rebalance our Army.”

This is why KM practitioners are imbedded at every level with an emphasis on training and leader development. TRADOC KM seeks to develop, implement and institutionalize a sustained Army knowledge management leadership education program which addresses all levels of professional development across the total Army.

In addition TRADOC KM is working to change the traditional Instructor Centric approach to a Transformed Learner Centric Environment. It is not simply a matter of training KM but rather using KM to train. With new emergent technologies and a generational change KM is able to connect the right information to right user more rapidly.

Since KM is integrated into the ALC 2015 it plays an essential role in the methods in which the Army trains its Soldiers. Whether it is using lessons learned combined with simulations to create virtual, training environments or creating

distributed learning and interactive multimedia packages KM works to bring knowledge to those who can benefit from it the most.

Conclusion and Way Ahead

TRADOC has leveraged the Army KM Principles to develop a strategy to provide a Key Enabler for executing the TRADOC Campaign Plan. The last two years have demonstrated that opportunities for success are boundless. While challenges do exist in resources and focusing the organization to “do the right things right,” the key to success in the future will be to leverage Army Enterprise Services to provide the technical infrastructure to deliver knowledge to the mobile learner and warfighter, anywhere, anytime. Follow on articles will address some of the issues that the leaders in the Department of the Army must resolve in order to deliver the broad range of knowledge management services to our warfighters and their families.

Joseph Oebbecke is the chief knowledge management officer for U. S. Army Training and Doctrine Command headquarters. He has also served as the program manager for Army Joint Knowledge Online and as a knowledge management strategic planner.

MAJ Michael Flatoff is a media relations officer at the U.S. Army Training and Doctrine Command.

Join the Discussion
<https://signallink.army.mil>



ACRONYM QuickScan

AAC – Army Accessions Command
AKMP – Army Knowledge Management Principles
ALC 2015 – Army Learning Concept
AMEDD – Army Medical Department
ArCIC – Army Capabilities Integration Center
ATC – Army Training Concept
ATS – Army Training Strategy
ATSC – Army Training Support Center
AWC – Army War College
BCKS – Battle Command Knowledge System
CAC – Combined Arms Center
CALL – Center for Army Lessons Learned
CKO – Chief Knowledge Officer
CoE – Center of Excellence
DOTMLPF – Doctrine, Organization, Training,

Material, Leadership, Personnel and Facilities
IM – Information Management
IMT – Initial Military Training
JKDDC – Joint Knowledge Development and Distribution Capability
JNTC – Joint National Training Capability
KM – Knowledge Management
MSO – Major Subordinate Organizations
OIL – Observations, Insights and Lessons Learned
OSD – Office of the Secretary of Defense
T2 – Training Transformation Initiatives
TCP – TRADOC Campaign Plan
TKMC – TRADOC Knowledge Management Council
TRADOC – Training and Doctrine Command

Leaders are the critical element in the network

Applying the Kotter Change Model in shaping future information systems

By MAJ Jay H. Anson

This article uses the Kotter Change Model to analyze the Army's new vision and strategy for future information systems development as described in the Army Capstone Concept. The author describes how leadership shortfalls created the current situation, current measures being taken by our leaders to fix the system and considerations for the way ahead.

Lessons learned tracking friendly and enemy forces manually during Operation Desert Storm in Iraq or Restore Hope in Somalia, resulted in a demand for more efficient information systems on the battlefield.

Maintaining situational awareness and understanding became extremely difficult with multiple elements moving throughout the operational area and performing different tactical missions simultaneously. The lessons learned by past leaders and their recommendations were heeded. In the years since the end of the cold war, the military has leveraged different scientific innovations to deliver significantly advanced command and control platforms. However, lessons learned from today's operating environment and the uncertainty and complexity of future armed conflict call for a new approach to "network-centric warfare."

The new Army Capstone Concept for 2016 to 2028 was released 21 Dec. 2009 and titled "Operational Adaptability: Operating under Conditions of Uncertainty and Complexity in an Era of Persistent Conflict." The Army Capstone Concept provides the Army's vision and strategy for the development and acquisition of new technology. The document identifies joint interoperability, realistic training, and reducing information overload as critical capabilities for the future operating environment. The next generation of information systems should be designed with these capabilities in mind. To accomplish this, leaders must avoid the

pitfalls of poor business practices, organizational culture and interservice rivalry that have impacted the development of past and present information systems.

The Army's acquisition and funding processes have led to a vast assortment of command, control, communications, computer, intelligence, surveillance and reconnaissance systems. The functions and capabilities of each system are as diverse as they are limited, having been acquired in stovepipe fashion to serve a singular or specialized purpose.

An organizational culture supporting an influx of technology over the past two decades has resulted in an ever-increasing amount of complex technology incorporated into each new upgrade. A by-product of this is a serious training deficit due to time and resource constraints. Leaders and operators either lack the knowledge and proficiency to take full advantage of system capabilities or avoid using the system altogether. Significant time and resources have been wasted due to a lack of collaboration between the Services and misconceptions regarding the existing degree of joint interoperability.

The needed changes call for organizational reform on a grand scale. Not only must specific policies, regulations and standard operating procedures evolve, but a major shift in paradigms, attitudes and beliefs are required throughout the organization. This is easier said than done.

Although the Goldwater-Nichols Department of Defense Reorganization Act was passed into law by Congress in 1986, little actual reform has occurred. For example, a recent article published in the 12 April 2010, editions of both the Army Times and Air Force Times titled "GAO: Army, Air Force Should Have Collaborated on UAVs," identified missed deadlines, performance shortfalls and budget overruns resulting from the development of the Army Predator program and a separate Air Force Sky Warrior program (Spath, 2010). Had the two Services collaborated on their unmanned aerial system programs, the DOD would

have saved taxpayers over \$3 billion.

Large scale change requires more than just written policies and directives that pay lip service to the desired endstate. Such an endeavor requires leadership and genuine command emphasis along with an expert and proven approach for successfully transforming an organization with the U. S. Army's size and scope.

The Kotter Change Model

In his book, *Leading Change*, John Kotter, Harvard business school professor, introduced a goal-oriented eight-step change model. The Kotter model concentrates on key areas of concern when transforming large organizations.

Central to the success of this model are quality leaders that facilitate change by breaking the status quo, inspiring and motivating people and institutionalizing positive changes.

The eight steps are:

- Establishing a Sense of Urgency
- Creating the Guiding Coalition
- Developing a Vision and Strategy
- Communicating the Change Vision
- Empowering a Broad Base of People to Take Action
- Generating Short Term Wins
- Consolidating Gains and Producing Even More Change
- Institutionalizing New Approaches in the Culture

Establishing a Sense of Urgency

"But the proverbial wall has been brought to our back. What might have been considered a noble or worthy endeavor in the past is now a task that can no longer be denied or postponed," said Robert M. Gates, then

"Although the Army must continue to develop technology to meet future challenges, we must emphasize the integration of technology into capable formations commanded by innovative leaders who are comfortable operating under conditions of ambiguity and uncertainty."

GEN Martin E. Dempsey
U.S. Army TRADOC Commander
TRADOC Pam 525-3-0: Army Capstone Concept,
December 21, 2009

U.S. Secretary of Defense. He described the urgent need for acquisition change in remarks delivered 8 May 2010, during the 65th Anniversary of World War II observance at the Eisenhower Library in Abilene, Kan. The quote is as much an admonition as it is a warning to those in both the military establishment and the defense industry wanting to maintain the status quo. Unlike past warnings from high-level government executives, Gates is backing up these words with decisive action. Demand for reform is being echoed by senior military and civilian leaders at all levels and supported by sweeping program cuts, changes to the way prototypes are funded, and a switch to performance-based logistics. Powerful messages by top brass have become the wake up call for change. Military leaders and contractors are scrambling to rethink and rework the type of technology leaders need, its delivery, and leader development necessary for effective employment.

In a 4 Mar 2010 speech delivered to the U.S. Army Command and General Staff College, ADM Mike Mullen, Chairman of the Joint Chiefs of Staff admitted that poor leadership was to blame for the current situation. He said, "... in

times of rising budgets, we lose our requirement to make tough choices. We lose our analytical capability because the money keeps flowing in."

Military leaders past and present collectively failed to keep spending under control. ADM Mullen warned, "Those days, for the foreseeable future, are gone. As you saw Secretary Gates propose, and Congress subsequently agreed, to kill an awful lot of programs... A very important message in that regard (sic). We can't afford to be wasting resources."

The importance of harnessing and leveraging technology received increased attention following the fall of the Soviet Union and victory during ODS (Cheney, 1991). During subsequent reviews of national security and military strategies, one sees the emphasis for building on the technological edge that gave the United States such a distinct advantage in the Persian Gulf (Shalikasvilli, 1995). Victory in future conflicts depended on winning the "information war" and therefore the "leverage attainable from... high-speed data processing" warranted special attention. The DOD set

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out to acquire the systems that would help them meet the mandate of the CJCS and the secretary of defense to “harness the GIG.” At the highest levels of government, investing in the right kinds of technology at the right time continues to be a top priority.

In the 2010 Quadrennial Defense Review, Secretary Gates identified the ability to “operate effectively in cyberspace” as one of the DOD’s six key missions.

Cyberspace has evolved from merely a conduit for information or a revolution in the way leaders exercise command and control. Along with land, sea, air, and space, cyberspace has become a fifth domain in which war is already being waged and the military is working feverishly to dominate. To that end, the Honorable John McHugh, secretary of the Army, in a 10 June 2010 speech delivered to the Association of the U. S. Army Institute of Land Warfare avowed that, “The Army... will take every step; make every investment to ensure our forces are the best equipped, most lethal force on earth... I have no interest in creating a so-called fair fight.” Despite the need to reform the acquisition process, the importance of information technology has not changed. As acknowledged by GEN George W. Casey, Army chief of staff, in remarks delivered on 25 June 2010 during the U.S. Army Signal Corps’ 150th Birthday Celebration at Fort Gordon, Ga., “The Army needs to be versatile and it needs to be agile. Those are two qualities that the network brings.”

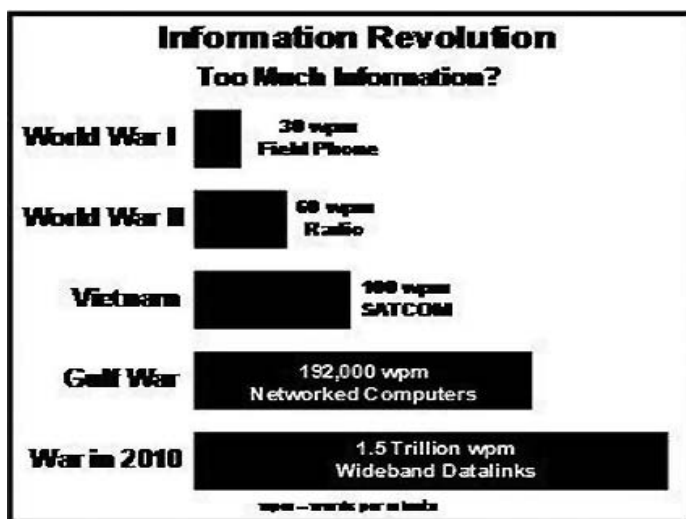


Figure 1. Information Revolution

Army leaders also acknowledge that the best technology is only as effective as a leader’s ability to employ it successfully. After nine years of continuous overseas contingency operations, the DOD has come to realize that technological superiority does not equate to information superiority. The new vision and strategy must be based on a better understanding of how leaders can apply technology effectively.

Rather than the centralized command and control architecture existing information systems have created, the new strategy should facilitate the decentralized mission command for which the use of IT was originally intended.

The resulting sense of urgency stems from a realization that the U.S. Armed Forces will soon draw down in Iraq and Afghanistan. Consequently, the nation will enter an interwar period of familiar budget cuts, social and political advocacy for avoiding future protracted wars, and closer scrutiny of required military capability. The danger of falling back into the previous patterns of stovepipe acquisition, competing over defense budget allocations, and divisive interservice rivalries is all too real. If this occurs, any gains towards reform made over the last nine years, and paid for in blood by America’s sons and daughters, will be lost.

Creating the Guiding Coalition and Obtaining Leader Buy-in

A guiding coalition for technology reform already exists. This group of top political and military officials absolutely recognizes that a significant amount of time, taxpayer dollars, and effort is wasted on military programs each year. The overwhelming evidence of leader buy-in is manifested in recent speeches, official documents, and defense budget decisions. Senior and respected leaders across the armed forces are committed to ending interservice rivalry, changing organizational culture, and reforming acquisition.

President Barack Obama took action to curb military spending shortly after taking office. Recognizing unnecessary defense spending, he quickly moved to terminate costly projects such as the F-35 fighter jet engine and the VH-71 Presidential Helicopter.

In a February 2010 Time Magazine article, Secretary Gates stated that the “Pentagon budget will be shifting from theoretical, conventional wars to the unconventional ones the military is fighting now.” A prime example of this shift is the recent cancellation of the Future Combat Systems program, and the development, production, and delivery of the

Mine Resistant Ambush Protected vehicles. Rather than building capability against possible future threat, the MRAP targets existing threats prevalent during ongoing operations.

William J. Lynn III, deputy defense secretary stated in an article for AUSA magazine "How we integrate IT into our operations and structure its acquisition is among the most important determinant of our military power."

Meanwhile, McHugh recently called for reformed acquisition and requirements processes with more accurate information on demands from commanders in the field. A key constraint to reaching this goal is money. In the memorandum Calendar Year 2010 Objectives co-authored by McHugh and GEN Casey, the proposed need to "refine the Army for the 21st Century" is further qualified with the need for an "affordable modernization strategy."

Developing a Vision and a Strategy

GEN Dempsey calls the Army Capstone Concept the "beginning of an ongoing campaign of learning." It contains the initial guidelines defining the vision and strategy for improving information systems. The type of technology the Army develops and the way it is procured will play critical roles in future armed conflicts. Army leaders have also come to realize and identify the limitations of communications technology. The over abundance and complexity of the systems developed in the last few decades gave way to new leadership challenges. Figure 1 shows how advances in technology have exponentially increased battlefield data flow (See Figure 1 on page 22).

Enhanced IT, bandwidth, and

processing speed over the past few decades boosted the amount of information flowing freely across the current operating environment. In less than a century, the military went from field telephones to high-speed tactical Internets. The first significant leap forward came in the late 1980s with the ability to network computers. This led to a vision and strategy in the 1990s for technology-based transformation and the ability to enhance battlespace knowledge using surveillance, communications and information systems. This in turn influenced Army doctrine, training, defense spending and the perception of the future operating environment. Leaders believed that technology could overcome any uncertainty and that small network-centric organizations could win wars cheaply and quickly. The business practice of the time was to build capacity through the continuous acquisition of the latest technological trends rather than filling specific demands. For example, Figure 2 shows the significant increase in the number of available systems and infrastructure in the 12 years between ODS and Operation Iraqi Freedom. During ODS, commanders traversed the vast battlefield continuously in order to gain better situational awareness and understanding. However, limited voice and data support was available at the halt. Commanders executed the majority of communications via short-burst radio messages, while sending longer messages using satellite phones. In contrast, the tactical networks used in OIF allowed commanders to transmit and receive vast amounts of data across the globe from centralized locations.

Although information system capacity has increased significantly in a short amount of time,

human brain capacity and the cognitive abilities of the average Soldier have not. New risks from information overload and shortfalls in systems integration result from the complexity of new technology and threaten to overwhelm Army leaders. Rather than being a combat multiplier, the additional time gained from automating previous human functions is now spent processing and analyzing data and there is an increased risk that pertinent data will be lost in a vast sea of electrons.

If the majority of information is untimely, redundant, or irrelevant, then the extra time gained is immediately wasted. Leaders will perceive the new IT as a major drawback, rather than embracing it as a combat multiplier. The right systems and training are keys to mitigating information overload and achieving optimal systems integration (See Figure 2).

Communicating the Change Vision - Operate Effectively in Cyberspace

Never has a strategic communications campaign for the transformation of information systems been conducted with such versatility and scope on so many different fronts and through so many different mediums. The DOD has launched an extensive campaign advocating improvements to the acquisition process, the relevancy of information systems, and the quality of leader development programs. The most glaring example is the emphasis on Cyberspace, its designation as a new war fighting domain, and the creation of the U.S. Cyber Command to dominate it.

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The Future Signal Corps

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Leaders in the DOD acknowledge that better fusion of intelligence and operations using communications technology allows commanders to produce action plans that are executable in real time. But to be dominant in cyberspace requires decentralized mission command and a campaign strategy that goes beyond the generalizations found in the Army Capstone Concept and the theories introduced during professional military education. The two dominant schools of thought regarding systems integration and combating information overload must be considered. The commonality approach favors the standardization of systems as a means of eliminating as much training and operating friction as possible. Meanwhile, the procedural approach focuses on systems integration and developing methods for processing information.

In the Encyclopedia of Computer Science and Technology Dr. Victor H. Yngve advocated the need for commonality in systems between Service components. According to a 2010 Defense Daily article on the Army and Air Force Unmanned Aerial System programs, it would appear that the military is heading in this direction. Interoperability through platform commonality has become the focal point of much effort between the Army and Air Force. Standardized systems such as the UAS and the handheld One System Remote Video Terminal used by land forces to view live video feeds, are beginning to appear more frequently among the Services. COL Christopher Carlisle, Director of the Army UAS Center of Excellence at Fort Rucker, Ala., said in an Army Times article, "the

commonality of systems and open architecture is not only required, but it's demanded for any new equipment."

COL Carlisle's statement alludes to a stronger argument regarding future C4ISR programs that John Garing, DISA director for strategic planning, refers to as the "efficiency imperative." The efficiency imperative highlights the importance of reducing costs and overhead for systems by moving to a shared, standard system for common services. The efficiency imperative is not without merit. The net-enabled command capability program, the proposed next generation joint command and control platform, failed to meet the imperative of reducing costs and overhead. Inter-service haggling over capability requirements, shifting demands, and funding setbacks compounded the situation and led to the program's cancellation.

The counterpoint to system commonality is also the current solution to bridging commonality gaps and interoperability. The authors of Planning and Architectural Design of Modern Command Control Communications and Information Systems, a book written in 1997, offer that different systems logically integrated into the command and control construct of the organization are acceptable. The authors maintain that the effective interaction of two primary functions, data fusion and decision support, is more important than standardization of technology.

In a March-April 2010 Military Review article, BG (R) HubaWass De Czege, the founder and inaugural director of the School for Advanced Military Studies located at Fort Leavenworth, Kan., cautions leaders regarding the pitfalls

of becoming overly dependent on networks. Units tend to overemphasize IT acquisition and commonality as the primary means to become a "network-centric" organization. By attempting to replace the human dimension of system integration with system commonality, the tendency is to ignore the relationship between the information and combat power. Regardless of the systems integration method, competent leaders able to process shared information logically are absolutely critical.

Empowering Leaders to Take Action

Despite the emphasis on shared procurement set forth in Goldwater-Nichols, the Services have often gone their separate ways in pursuing new technology (Goldwater-Nichols, 1986). In fact, one of the duties of the CJCS is to report any "unnecessary duplication of effort among the armed forces" and "changes in technology that can be applied effectively to warfare." Although the Army pursued the latter quite diligently, preventing unnecessary duplication was largely unsuccessful. This culminated at the onset of OIF when the DOD started associating the empowerment of leaders with providing more direct access to funds and suppliers.

With the military fighting two wars simultaneously, the services were encumbered by a combination of the complex bureaucracy in place, Title 10 U.S.C. obligations to defend the nation, the two-year timeline that the process takes, and a lack of oversight to ensure joint interoperability. By the time a new program had the budget, the associated technology was

C4 Infrastructure OIF vs. ODS			
System	Pre-OIF	OIF	Change
Commercial Satcom Terminals	5	34	+560%
Average Commercial Bandwidth (Mb)	7	10	+47%
Military Satcom Terminals	20	44	+120%
Average Military Bandwidth (Mb)	2	3	+68%
Terrestrial Links (aka Ground LOS)	11	30	+173%
Average Terrestrial Bandwidth (Mb)	2	10	+444%
Global Broadcasting System (Mb)	24	24	0%
Total Terminals	36	107	+167%
Total Bandwidth (Mb)	113	783	+596%

Figure 2. USAF C4 Infrastructure OIF vs. ODS

either obsolete or outdated. In an effort to streamline the process, the DOD established new policies for Concept of Operations funds and Operational Needs Statements. CONOPS money was intended solely for parts, supplies, and equipment that units lack but would need to accomplish its mission during overseas contingency operations while ONS was reformed to facilitate the quick procurement of commercial-off-the-shelf solutions to equipment or capability shortfalls using the rapid acquisition system. Originally, the ONS process was originally a method for commanders to request war reserves during combat operations. Using CONOPS and ONS, commanders would opt to wait until the unit was in the “train-ready” pool of the ARFORGEN cycle just prior to a deployment. Once in this window, leaders were able to make large CONOPS purchases or submit ONS for big-ticket items not otherwise authorized.

Instead of mitigating the acquisition process, the DOD actually created the current surplus accumulation of information systems. In the July 26, 2010 edition of Army Times, LTG Jeffrey Sorenson, Army CIO-G6, remarked that in the past 10 years, the Army “nearly doubled the types of radios it owns, from 11 in 2000 to 20 today.” In that same timeframe, the Army inventory of radio systems has almost tripled, from 365,000 to 919,052. There are now almost as many radios as there are Soldiers. Many of these special purchases result in non-program of record systems being fielded to units while program-of-record systems go unused. Soldiers remain untrained on the systems procured by the DOD. Furthermore, there is no standardization from unit to unit either in the type of systems or equipment. Instead of flooding the operating force with more and more systems,

better training on the operation and integration of existing systems is needed.

Historically, systems integration issues resulted from training deficiencies. A Center for Army Lessons Learned newsletter on Army and Air Force integration published in 2008 included the initial report on a joint effort by both the CALL and the Office for Air Force Lessons Learned. In 2006, the nine-member collection and analysis team focused on Army and Air Force command and control issues during overseas contingency operations. A key finding was the need for more training on the systems of record used in theater. Anchored by past experiences with information systems, leaders wrongly believed that many information systems were not compatible or too complex and therefore opted for non-program of record systems. Training and education serves to clarify and eradicate these types of cognitive biases, misleading notions, and myths surrounding communications capabilities. The belief that Army systems can not be integrated with the information systems of other Services is a fallacy requiring a paradigm shift in the minds of leaders at all levels. Finding the time and resources to effectively train on interconnectivity methods, integration of data, and system capabilities is often the greatest challenge.

Generating Short Term Wins with Better Collaboration

Clear command messages mandating reform and decisive action have resulted in a number of noticeable results in a short amount of time. Improved collaboration between the Services and defense industry leaders is improving the DOD’s ability to meet leader requirements. Meanwhile, cancellation of programs rife with cost and schedule overruns have made it possible to concentrate on developing existing information systems and training facilities more appropriate for developing innovative and adaptable leaders.

In an ongoing effort to improve training facilities, all major installations are establishing battle command training centers. These digital training centers allow units to train on all C4ISR systems in an integrated, joint interoperable environment. The ability to replicate complex scenarios at home station provides an affordable alternative to costly and resource intensive national training exercises.

New approaches to training in high-intensity ground conflicts as well as replicating cultural environments and non-kinetic operations can be

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achieved with simulations. The state-of-the-art programs offered by the BCTC apply the latest research and technology to give leaders much needed proficiency in information systems operation, integration, and the latest achievements in joint interoperability.

An example of improved interoperability is the Combat identification server. The CID uses service-oriented architecture to merge Link 16 and Blue Force Tracker feeds to meet the demand for a singular air-ground common operational picture. Figure 3 demonstrates how CID combines Link 16 and FBCB2 feeds. The CID server polls different graphics-oriented battlefield tracking systems and compiles all positional data into a centralized database. Units then subscribe to the server and the resulting streams of data form an integrated COP. A by-product of this interconnectivity is a reduction in vehicle and command post hardware that commanders, operators and battlespace controllers have to monitor.

Consolidating Gains and Producing Even More Change

Nine years of continuous overseas contingency operations have contributed greatly to breaking the parochial mentality of military culture and noticeable gains in joint, interagency, and multinational interoperability. Significant progress has been made towards ending interservice rivalry, changing organizational culture, reforming the acquisition process, and identifying cost-effective methods of dealing with budget constraints and limitations. According to the 2010 QDR and 2008 National Defense Strategy, current strategic defense goals focus not only on achieving joint interdependence and interoperability, but also interagency and multinational sharing of IT. Decision superiority, the process of making decisions better and faster than an adversary, is essential to executing military campaigns and operations with speed and agility. Enhancing the interoperability of joint, interagency, and multinational IT through better systems integration and management will enhance current levels of cooperation and interdependence. Joint Publication 1 states, "The Armed Forces... are most effective when employed as a joint force." Military leaders are better aware of the benefits of Unified Action through joint interdependence. Recent advancements in interoperability between all four Services are the result of joint collaboration. Joint force commanders rely on information systems to gain situational awareness and understanding. The ability of all Services to share a COP is an important

milestone in the pursuit of joint interdependence. Acquiring future systems to maintain this level of network-centric synergy will require an equal amount of cooperative effort.

The next step involves a whole-of-government approach to overseas contingency operations. This requires synchronizing the Department of Defense activities with those of other government agencies. Doing so leverages military resources and security capability with the expertise in governance, economics, and infrastructure of other agencies. The rise of the provincial reconstruction teams and the brigade combat team-augmented is an example of the DOD's commitment to this endeavor. As interagency interdependence becomes the standard, the requirements for interoperable communications become more apparent. Successful collaboration requires finding a balance for shared access to systems, tools and bandwidth for all agencies.

Beyond intra-governmental cooperation, U.S. military actions are always a multinational effort. Unfortunately, poor interoperability has denied these coalitions adequate situational awareness through a multinational common operating picture. The majority of documented fratricide incidents thus far in Operations Enduring Freedom and Iraqi Freedom have involved military units of different nations. The inherent risk to coalition cooperation in future operations demands that U.S. military officers possess the operational adaptability to operate at degraded levels of compatibility with partner militaries.

Institutionalizing the New Military Culture

As the Army vision becomes reality, leaders will develop tactics, techniques, and procedures that must be documented and shared with the rest of the Army. Institutionalizing these developments entails updating existing doctrine, policies, and professional education curricula. The description of the future operating environment portrayed in recently updated doctrine along with what it will take to fight, survive,

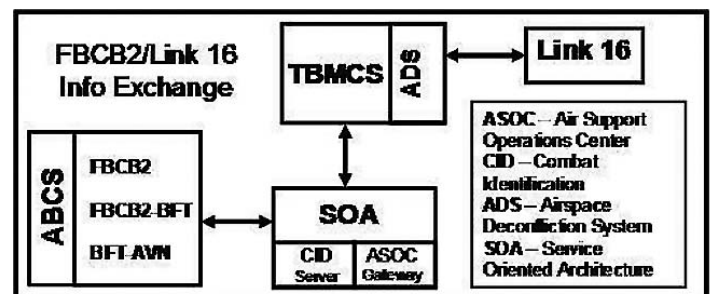


Figure 3. FBCB2-Link 16 Information Exchange

and win described in the Army Capstone Concept are only the first steps in what is still to come.

Conclusion

Army leaders are in the process of simultaneously communicating a new vision and strategy for changing the military's approach to information systems.

Further insight into this process is gained by applying the eight-step Kotter model and the analysis generates considerations for implementing the Army Capstone Concept vision and strategy.

Senior leaders are establishing a sense of urgency and empowering leaders at all levels to take action. The on-going focus on acquisition reform and improved interoperability is already generating short term wins and the Army leadership is looking ahead to increasing gains in joint, interagency and multinational interdependence.

Many challenges lie ahead as new information systems are incorporated into organizational culture through revised doctrine, professional development, and education. Information systems

are being recognized as more than just a passing fad or luxurious commodity.

Communications systems are essential to mission command and at the heart of these systems is the leader. How leaders use the systems and the information is what matters, not the technology.

Leaders apply technology and processes to make decisions based on situational understanding, comprehension, and personal abilities. But the procedural approach to interoperability offers only a temporary fix, whereby system commonality should remain the ultimate goal.

The Army leadership is making great progress in clearly communicating its vision and strategy. A campaign that conveys the key issues at hand, the best options available, and the courses of action required to correct shortfalls will empower leaders at the lowest echelons to carry out that vision and strategy. The end result is the integration and synchronization of war fighting functions needed for mission command and decentralized mission execution. Tomorrow's systems must

support leaders who are already comfortable with uncertainty by enhancing critical thinking skills, independent operation, and clear communication of the commander's intent.

After decades concentrating on technology, Army strategists are correctly focused on leadership as key to the future information systems that will dominate cyberspace.

MAJ Jay H. Anson is presently the S2 officer for the 72d Signal Battalion. He holds a master of military arts and science degree, Command and General Staff College; master of science degree, management information systems, University of Phoenix; and a bachelor of science degree in business administration from the University of Maryland. He has served as company commander, C Co 277th ASB and S6, 277th ASB, 10th CAB (OIF 09-11); NetOPS OIC, CJ6, CJTF-76 (OEF VII); and systems integration officer for the 121st Signal Battalion, 1st Infantry Division (M), Kitzingen, Germany.

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ACRONYM QuickScan

ADS - Airspace Deconfliction System
ARFORGEN - Army Forces Generation
ASOC - Air Support Operations Center
AUSA - Association of the United States Army
BCTC - Battle Command Training Center
C4 - Command, Control, Communications, Computer
C4ISR - Command, Control, Communications, Computer, Intelligence, Surveillance, Reconnaissance
CALL - Center for Army Lessons Learned
CID - Combat Identification
CIO - Chief Information Officer
CJCS - Chairman of the Joint Chiefs of Staff
CONOPS - Concept of Operations
COP - Common Operational Picture
DISA - Defense Information Systems Agency
DOD - Department of Defense

FBCB2 - Force XXI Battle Command Brigade and Below
GIG - Global Information Grid
IT - Information Technology
LOS - Line of Sight
Mb - Megabits
MRAP - Mine Resistant Ambush Protected
ODS - Operation Desert Storm
OIF - Operation Iraqi Freedom
ONS - Operational Needs Statements
OSRVT - One System Remote Video Terminal
SATCOM - Satellite Communications
SOA - Service-Oriented Architecture
UAS - Unmanned Aerial System
USAF - United States Air Force

Expeditionary Signal Battalion set to do more with fewer personnel

By MAJ Lan T. Dalat

The current expeditionary Signal battalion, also known as the integrated theater Signal battalion – joint network node, was developed by the Director of Combat Development Center at the U.S. Army Signal Center of Excellence to mitigate the shortfalls of the divisional Signal Corps organizational concept.

Approved by the U.S. Army vice chief of staff on 10 Nov. 2006, the 485 personnel ESB design allows the Army to transform toward the modular force structure. To further refine the ESB design while conducting two wars, the SIGCoE adopted the “Transforming Cyber While at War” philosophy to correct deficiencies within its current design.

The ESB design has been revised twice to maximize its capability. The approval of the first revision in April 2009 reduced 23 spaces within the Table of Organization. In May 2010, the ESB took on its current form, which adds two Secure Mobile Anti-jam Reliable Tactical Terminals to each battalion. With the establishment of the expeditionary Signal battalion, the Army has the ability to deploy 30 points of presence that connect deployed command posts from the battalion level up to joint task force headquarters. The ESB design meets the Army’s communications requirement for a modular force operating in theatre

with the basis of using existing technology such as the Warfighter Information Network – Tactical Increment 1 and the Single Shelter Switch 3 with Internet protocol based switching. These battalions enable mission command within combined arms maneuver operations using theater-centric network services but still lack capabilities in many areas such as coalition network connectivity, video teleconferencing capability for command and control, and command post support to lower level echelons.

In support of the current modular force structure in the Army force generation, the Army must man and equip 24 ESBs with a combined strength of more than 11,000 Soldiers. The break down includes 12 ESBs in the active component, seven ESBs in the Army National Guard, and five ESBs in the Army Reserve. In recent months, the 307th ESB deployed to northern Afghanistan to remedy a problem with U. S. communications infrastructure. According to both, MAJ David W. Gill, 307th ESB S3, and CPT Aaron M. Parker, 307th ESB assistant S3 and battle captain “the battalion literally built the strategic network from the ground up using the Node 200 along the battalion’s organic satellite terminals. The battalion also established line-of-sight circuits to provide communications services to the Regional Command – North headquarters. However, the

communications requirement from disadvantaged users on Camp Marmal and various forward operating bases exceed the capability of Node 200 and the 307th ESB’s organic assets.”

In a recent Force Design Update cycle 11-1, The Signal proponent functional area assessment indicated that the current ESB design could only support 34 percent of command posts within an ARFORGEN deployment cycle. To increase the capability gaps for CPs that lacked network connectivity, in February 2011 SIGCoE leaders refocused efforts on modifying formations’ design to increase Signal capabilities without adding more personnel. The challenges for SIGCoE leaders begins when they must address immediate shortfalls that range from providing network connectivity for a maneuver company of a brigade combat team to a joint task force headquarters deployed in theatre. To provide this type of coverage without adding more personnel, the changes must be modular, scalable and reduce the logistic footprint. The organization of an ESB must also be restructured with more teams, equipped with more capabilities, to support the current and future ARFORGEN deployment cycle. The restructured battalion will be based on an “everything over Internet protocol” communications architecture.

“The network support

packages, termed Micro-Cyber, are the future of the Signal Regiment. “μCyber” will provide mission command essential capabilities across all echelons” MG Alan R. Lynn, U.S. Army Signal Center of Excellence commanding general and Chief of Signal, said on 20 May 2011.

Based on the Chief of Signal’s discussion, the equipment for the restructured Signal battalion must be lightweight modern technology with superior networking capability that will double the Signal capabilities in terms of point of presence.

This would also address the shortfalls in the ARFORGEN deployment cycle by providing a significant increase in the available pool of communications support packages. The increase will go from 150 to 432 network support packages. Additionally, the disadvantaged units such as theater units, functional brigades and battalions, and maneuver companies will enjoy increased



capacity and capability moving from 34 percent up to 98 percent communications coverage.

Under the current FDU cycle, the SIGCoE has proposed changes to the current ESB with the Expeditionary Signal Battalion - Enhanced. If this change is approved, the Signal Regiment will have the most technologically advanced Signal battalions equipped with EoIP technology. The ESB-E will primarily use modern commercial off-the-shelf and available government off-the-shelf equipment to leverage the superior communications capability that is tailorable to

address a full range of mission capabilities within the full spectrum operating environment. The bottom line is that these changes will save the Army more than \$11.5 million dollars annually to include the active component, the Army National Guard and the U.S. Army Reserve’s ESB-E based on a cost analysis estimate of the current FDU.

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ACRONYM QuickScan

ARFORGEN - Army Force Generation Cycle
ARNG - Army National Guard
BCT - Brigade Combat Team
CENTRIX - Coalition Enterprise Regional Information Exchange
CGSC - Command and General Staff College
COTS - Commercial off-the-shelf
CP - Command Post
C2 - Command and control
EoIP - Everything over Internet Protocol
ESB - Expeditionary Signal Battalion
ESB-E - Expeditionary Signal Battalion - Enhanced
FAA - Functional Area Assessment
FDD - Force Design Directorate
FDU - Force Design Update
FOB - Forward Operating Base
GOTS - Government off-the-shelf
Inc-1 - Increment 1
IP - Internet Protocol
ITSB-J - Integrated Theater Signal Battalion - Joint

Network Node
ILE - Intermediate Level Education
JTF - Joint Task Force
NATO - North Atlantic Treaty Organization
PoP - Point of Presence
RC-N - Regional Command - North (Afghanistan)
SATCON - Satellite Control
SIGCoE - U. S. Army Signal Center of Excellence
SMART-T - Secure Mobile Anti-jam Reliable Tactical Terminal
TOE - Table of Organization
USAR - United States Army Reserve
USDCM-A - United States Deployable Communications Module A
VCSA - Vice Chief of Staff of the Army
VTC - Video teleconferencing
WIN-T - Warfighter Information Network - Tactical
μCyber - Micro-Cyber

Network architecture will provide greater flexibility

By Amy Walker

Forwarding observations of the dismounted Soldier up the chain of command in real-time will enable commanders to make quicker, more informed decisions, increasing the effectiveness of U.S. military forces.

"It's now being recognized, especially from an intelligence, surveillance and reconnaissance perspective, that the individual Soldier is really a sensor," said Matt Iannelli, senior systems engineer for the Program Executive Office Command, Control, Communications-Tactical

Technical Management Division. "To not have the Soldier as part of the network reduces the capability of the overall force."

During Operation Iraqi Freedom and Operation Enduring Freedom we have realized a need for communications systems down to the company level. More robust, dismounted, Soldier-based systems enable a Soldier to directly inject ISR observations into the command and control network. Data that Soldiers traditionally observed and reported after the fact will now be integrated into other networked systems in real-time, Iannelli said.

"The network represents the centerpiece of Army modernization," said GEN Peter Chiarelli, U.S. Army vice chief of staff, in a testimony to the House Armed Services Tactical and Land Forces subcommittee earlier this year. "Ultimately, it will connect leaders and Soldiers at all levels, at every echelon of command, in any formation, and across the entire team—with the right information quickly and seamlessly. In doing so, it will make our various formations more lethal, faster and survivable. It will literally redefine how we fight."

Pulling dismounts and vehicles into the fold

Recent conflicts have demonstrated the increasing need for rapid two-way flow of information from the commander down to the Soldier level and the Soldier up to the commander. Soldiers have learned that critical information flow begins at the lowest echelons.

In the future, dismounted Soldiers carrying a Joint Tactical Radio System Rifleman Radio or JTRS man pack for transport will instantly share information across the squad up through battalion echelons, as well as up the chain to higher headquarters when necessary.

Connecting the dismounted Soldier into the network
PEO C3T's Joint Battle



A Tactical Communications Node during the six-week Warfighter Information Network-Tactical Increment 2 Production Qualification Test-Government, which concluded on 5 August 2011 at Aberdeen Proving Ground, Md.

Command-Platform Handheld is a smart phone that can connect to JTRS as well as other tactical radios, said Jay Latham, a contracted systems engineer supporting PEO C3T TMD. JBC-P Handheld is the first developed under an Army effort to devise a smart phone framework and suite of applications for tactical operations.

"The Army and other services have bought a lot of different systems to meet specific operational needs, but the problem with most of those is they were designed to talk to themselves and they didn't integrate into other systems," said COL Buddy Carman, Training and Doctrine Command capability manager for Brigade Combat Team Mission Command. "A big step for us is to make sure that the data goes from dismounted leader to platform to command post."

The JBC-P Handheld government-owned framework, known as Mobile/Handheld Computing Environment, ensures that regardless of who develops them, applications will be secure and interoperable with existing mission command systems. As a result, information will flow seamlessly across all echelons of the force. This highlights the overall direction for network applications programs which is to consolidate capability onto common hardware, a common operating environment, and commonly accessible databases.

As for Army vehicles at lower echelons, the strategy is to roll out a mix of celestial and terrestrial communications. Key leader vehicles will have both line-of-sight and satellite communications for more robust connectivity. Those that operate over larger areas or require relatively low bandwidth will have vehicles with SATCOM only. Those that need the higher bandwidth or



Photo by Ashley Blumenfeld

Paratroopers from the 3rd Brigade Combat Team, 82nd Airborne Division, use Joint Tactical Radio System Handheld, Manpack, Small Form Fit radios and prototype Joint Battle Command-Platform handhelds to communicate during a field exercise at Fort Bragg, N.C., in March.

need to integrate very tightly with dismounted Soldiers will be fielded with LOS terrestrial radios. JTRS radios will be used in vehicular configurations, with Blue Force Tracking 2 serving as the SATCOM component, Latham said.

On-The-Move Network Communications

On-the-move communications is another important facet of the Army's future network architecture. PEO C3T's Warfighter Information Network-Tactical Increment 2 will bring mobility to the Army's tactical network. Similar to a home Internet connection, WIN-T

In the future, dismounted Soldiers carrying a Joint Tactical Radio System Rifleman Radio or JTRS man pack for transport will instantly share information across the squad up through battalion echelons, as well as up the chain to higher headquarters.

provides high-speed, high-capacity voice, data and video communications on the battlefield. By establishing a moving communications grid, Increment 2 eliminates the need to stop in order to communicate, increasing speed of maneuver on the battlefield and allowing commanders to stay connected at all times. WIN-T's initial production deliveries are currently undergoing a series of pre-fielding tests and evaluations and are expected to reach the first unit in 2012.

"Army senior leadership has recognized that the cornerstone of modernization is the network, and WIN-T Increment 2 delivers that high capacity network on-the-move," said LTC Robert Collins, product manager for WIN-T Increment 2. "Its fielding will be a significant milestone as we deliver the next-generation network that will transform how the Army operates and conducts its operational missions, both at-the-

(Continued on page 36)

The Future Signal Corps



Photo by Claire Schwerin

Warfighter Information Network Tactical equipment is pictured on 26 Oct 2011 at White Sands Missile Range, N.M., in preparation for the Army's Network Integration Evaluation 12.1 on 31 Oct. Second from the left is a WIN- T Increment 2 Tactical Communications Node.

(Continued from page 35)

halt and now on-the-move, all the way down to the company level. It's a major step."

Traditionally, the WIN-T network has been at the battalion level and above, but the Soldier Network Extension of Increment 2 will now extend that network down to the company level. In the past, terrain features often fractured the radio component of the network, but the SNE has the capability of healing the network using SATCOM as an alternative. With the SNE extended down to the lower echelon radio nets, such as the Wideband Networked Waveform, Soldier Radio Waveform, Enhanced Position Location Reporting System and Single Channel Ground and Airborne Radio System, radios can now "touch" the WIN-T network

backbone, increasing the scope of the Army's entire communications network.

Aerial Tier thickens Army's network

An aerial tier will thicken the Army's network, providing increased capability to almost everyone within its footprint. If units lose LOS access in today's architecture, they revert to SATCOM, which can come with high bandwidth/operator cost as well as more limited capability. But with the addition of the aerial tier, geographically separated units, previously interconnected only via SATCOM, are able to be more tightly integrated through a higher capacity, lower latency, noncommercial tier, which does not present the recurring costs of satellite bandwidth to the Army, Iannelli said.

An aerial tier helps with connectivity when forces are dispersed over relatively large areas of operation, or when operating in complex terrain. An aerial tier uses tethered aerostats or unmanned aerial systems to elevate radios/antennas thousands of feet above ground, thus greatly extending the range of terrestrial radios. "The radios/antennas share space on aerostats and UASs that are already in place for ISR purposes," Latham said. "The use of an aerial tier also helps to reduce the demand on heavily oversubscribed satellite systems."

Company Command Post

Traditionally, the company has had minimal fielding of communications and network equipment, and what has been fielded has not been standardized. The CoCP initiative standardizes

the core communications capability available at the company echelon, enabling other programs to build upon it. The CoCP provides company commanders effective situational awareness, allowing them to better plan and execute operations, understand the current situation and effectively visualize, describe and direct subordinates.

Company intelligence and surveillance teams will be among those taking advantage of the CoCP and building upon its existing architecture, Iannelli said. Cooperative tactical infrastructure collapse

During the last 10 years the Army has exponentially increased capability, but it has also introduced a great deal of complexity. Although the future focus will remain on increasing capability, it will be accomplished with a reduced complexity and equipment footprint to allow the Solider to focus on the mission and not the network, Iannelli said.

As a paradigm, the conflicts in Iraq and Afghanistan have forced the Army to stop thinking of C3T and ISR as separate entities and as a result the acquisition community is changing. Currently there is a cooperative effort between PEO C3T and PEO Intelligence, Electronic Warfare and Sensors to collapse servers where appropriate. Consolidating tactical server infrastructure and unifying tactical solutions will enable the PEOs not only to collapse their own servers within their own locations but to use each other's virtual server environment when needed.

"At this point C3T and ISR are very much tied at the hip in terms of the network and the systems architecture," Iannelli said. Flexibility and nimbleness

In line with the Army's modernization strategy, the

brigade level has become more modular, with a more flexible organizational structure allowing them to be task-reorganized seamlessly across the force.

However, counterinsurgency operations in OIF and OEF have highlighted gaps in current force capabilities, specifically at lower echelons. In today's counterinsurgency conflicts, companies and in some instances even platoons are being task-reorganized to other units, but the communication architectures for the current force are not designed around those concepts of operations, Iannelli said.

"It's been identified by Army leadership that the forces need to be able to affect change imminently and immediately to suit mission," Iannelli said.

One of the underlying elements of the future architecture is flexibility for the commander. Today, the initialization of systems is very rigid and there is a strict process

in standing up a network. It is also difficult to make changes once the network is stood up. To move a company from one brigade to another requires a great deal of reconfiguration to accommodate its new network. However, in the future many of these rigid processes vanish by nature of the architecture, Iannelli said.

"It doesn't serve a frenetic operational environment where you may need to change your entire network architecture to suit mission," he said. "Instead of the brigade as a puzzle piece today being moved through a division or corps architecture, you will soon be able to see a battalion or company element puzzle piece being moved just as nimbly through the greater Army."

Amy Walker is a staff writer for Symbolic Systems, Inc. supporting the Army's Program Executive Office Command, Control and Communications-Tactical.

ACRONYM QuickScan

COIST - Company Intelligence and Surveillance Teams

CoCP - Company Command Post

EPLRS - Enhanced Position Location Reporting System

ISR - Intelligence, Surveillance, Reconnaissance

JBC-P - Joint Battle Command-Platform

JTRS - Joint Tactical Radio System

LOS - Line-Of-Sight

OEF - Operation Enduring Freedom

OIF - Operation Iraqi Freedom

OTM - On-The-Move

PdM - Product Manager

PEO C3T - Program Executive Office Command, Control, Communications-Tactical

SATCOM - Satellite Communications

SINGARS - Single Channel Ground and Airborne Radio System

SNE - Soldier Network Extension

SRW - Soldier Radio Waveform

TMD - Technical Management Division

UAS - Unmanned Aerial Systems

WIN-T - Warfighter Information Network-Tactical

WNW - Wideband Networked Waveform

Publications improvement underway

Army Doctrine 2015 Methodology

Doctrine 2015 is a concept developed by the School of Advanced Military Studies and approved by the Army Chief of Staff that restructures Army doctrine. The concept enables the Army to develop doctrine faster while requesting fewer, shorter, and more clearly written publications that are easily accessible to Soldiers. SAMS and the Combined Arms Doctrine Directorate, U.S. Army Combined Arms Center, hosted a Doctrine 2015 Conference in August 2011 that provided specific guidance on Doctrine 2015 to all U.S. Army Training and Doctrine Command schools and centers.

Doctrine 2015 creates a multi-tiered affect

of doctrine publications starting with the Army doctrine publication. ADPs are limited to twenty pages and include the fundamental to support Army warfighting functions. The ADPs are supported by Army Doctrine Reference Publications which contain more detailed explanations of the fundamental principles, and are no more than 75 – 100 pages. The ADPRs render a consistent Army-wide interpretation of the foundational principle established in ADPs. The revision of FM 3-0 Unified Operations, published in October 2011, as ADP 3-0 and ADRP 3-0, serves as the prototype publications for ADPs and ADPRs. Field manuals represent the third tier under Doctrine 2015. The number of FMs under Doctrine 2015 is restricted to 50 FMs Army-wide, are less than

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Army Doctrine 2015 Overview

Army Doctrine Publications (ADP) [~15ADPs]

Fundamental principles



Army Doctrine Reference Publications (ADRP) [1 per ADP]

Detailed information on fundamentals



Field Manuals (FM) [50 FMs]

Tactics and Procedures



Techniques

Authenticated version on APD
Input through wiki version



Applications

(Interactive Media,
Podcasts, Mobile APPs)



Doctrine 2015

200 pages, and written by the proponents to explain tactics and procedures. Two emerging FMs, FM 6-02 Signal Operations and FM 3-XX Cyber Electromagnetic Operations, may be of special interest to Signal Soldiers.

Army Techniques Publications represent the fourth tier under Doctrine 2015. ATPs are a new category of publications under the Doctrine 2015 concept that will contain non-prescriptive ways or methods used to perform missions, functions, or tasks. ATPs publications will be managed by CALL using MilWiki capabilities. Some of ATPs will be derived from existing proponent doctrine publications. ATPs will have no size limitations, and there will not be any restrictions on the number of ATPs which a proponent develops.

Signal Doctrine 2015 Strategy Under Doctrine 2015, the SIGCoE will publish a single Field Manual, FM 6-02, Signal Operations. FM 6-02 will be the Signal Regiment's primary manual on Signal doctrine. Upon approval, contents will provide signal-specific tactics and procedures for Signal generating force global requirements and the operational enabling capabilities consistent with higher level joint and Army doctrine publications. FM 6-02 will continue to leverage the fundamentals principles derived from ADP 3-0, Operations, ADP 5-0, Operations Process, and ADP 6-0, Mission Command. It will also describe how all warfighting function capabilities and enabled at all echelons. The proposed chapters for FM 6-02 will include, but are not limited to the following: Operational Content, The Network, Signal Support at the Corps and Below, Expeditionary Support

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Signal Doctrine 2015 Plan

Tactics and Procedures

Field Manuals (FM)

20 Pages or less

Complete By Dec 2013

Approved by CAC Commander

- FM 6-02 Signal Operations
 - CH 1: Roles and Functions
 - CH 2: The Network
 - CH 3: Signal Support at the Corps & Below
 - CH 4: Expeditionary Support Capability
 - CH 5: Theater Operations
 - CH 6: Strategic Operations

FM 3-XX Spectrum Operations

Techniques

Army Technical Pub (ATP)

No size limit

Complete By Dec 2015

Approved by Signal COE Cdr



Training

Training Circular (TC)

No size limit

Complete By Dec 2015

Approved by Signal COE Cdr



Capability, Theater Operations and Strategic Operations. The techniques on how tactics and procedures are conducted will be further detailed in an Army Technical Publication (ATP) corresponding with each chapter in the FM. This affords, for example, a G-6/S-6 the ability to read FM 6-02 and the ATP specific to the mission at that echelon to understand the requirements, operations and structure.

Consistent with the Doctrine 2015 framework and the development of ADP, ADRPs, FMs, and ATPs; the Signal Center will also develop Training Circulars. TCs will be developed with the same resources used to develop Doctrine 2015 products, but will have a lower priority. TCs currently approved for development includes: Two Level Maintenance, Combined Arms Training Strategy, Signal Data Reference: Signal Equipment, Electromagnetic Spectrum Operations, and Communications Security

Operations. More TCs may be approved for development later to address other focus areas as required.

How to Access and Comment on Signal Doctrine

Access to Signal Doctrine may be obtained through the Signal Doctrine knowledge site on Army Knowledge Online at: <https://www.us.army.mil/suite/folder/926805>. The knowledge center security is set up to grant access to Active Duty, National Guard and Reserve Soldiers, as well as DA civilians and contractors. The site has information on DRAFT Signal Doctrine under development and this site provide Soldiers and leaders with other relevant information. Questions, comments, and recommendations related to Signal Doctrine can be provided via email to: signal.doctrine@conus.army.mil or signal.doctrine@us.army.mil.

Enabling certification, accreditation across a theater of operations

By LTC Michael Lanham, Thelma Wandhal-Bundesen, Donald DeLaHunt, Michael Charbonneau

Certification and accreditation of network enclaves allows Army service component commanders and their designated approving authorities to have a formal and repeatable process of identifying, measuring, mitigating and accepting risks to a critical command and control enabler – their communications networks.

The authors, and a team of professionals from the ASCC headquarters, the 335th Signal Command (Theater) (Provisional), and the 160th Signal Brigade, improved the C&A posture of USARCENT. The improvement allows USARCENT to better know what risks the command is formally accepting, as well as identify risks it had been informally accepting but did not truly know about.

There are many official definitions of Information Assurance and C&A. We'll review some of those definitions in the course of this article, but prefer an unofficial definition that is more readily accessible to operational forces and maneuver commanders.

IA is informed risk management and risk acceptance. C&A is a formal and repeatable way to identify, assess, reduce and accept risks for network enclaves. Risk acceptance, especially in environments with high personnel turbulence/turnover, should occur formally. Risk acceptance processes should support continuity of knowledge and understanding of the acceptance rationale.

An analogy between the Military decisionmaking process and C&A is appropriate at this point. MDMP is a formal and structured way to plan missions, including identifying and reducing the risks within those missions. C&A is a formal and structured way to plan the deployment and employment of network enclaves, including identifying and reducing the risks to the maneuver or operational commanders those networks support.

FM 5-0 Army Planning and Orders Production is the doctrinal basis for the Army's use of MDMP. For C&A, the doctrinal basis is in a trail of documents starting at Department of Defense Directive 8510.01 DoD IA C&A Process. The trail continues to the Chairman Joint Chiefs of Staff Instruction 6510.01E IA and Computer Network Defense, to combatant command policies and regulations and for Army units, ends in Army Regulation (AR) 25-2 Information Assurance.

The status quo for most Army network enclaves generally falls into one of three categories: no C&A at all; informal C&A; and formal C&A. Long-term members of Functional Areas 24 and 53 and members of the Signal Regiment will recall, with varying levels of nostalgia, enclaves they have built, sustained, maintained and operated without the faintest evidence of C&A activities. More likely, based on an unscientific sampling of the Army's Portfolio Management System, Army network enclaves and information systems fall into an informal C&A status – DAAs authorize operations of enclaves without being fully DIACAP-compliant

and without truly knowing what risks they are accepting on behalf of their commander.

Informal C&A was, and in many cases still is, a reasonable course of action for Commanders and DAAs to use. Informal C&A is considerably less expensive in up-front costs as well as long-term costs, thereby meeting DoDD 8500.01E guidance to, in the Commander's assessment, balance the five pillars of IA, the importance and sensitivity of network enclaves, threats, and costs. However, there are a number of risks associated with the informal nature of the C&A.

Those risks include: the lack of an independent, outside-the-command review of IA controls; potential for not using DoD standard IA controls and assessment methods; and decisions based on deliberately incomplete information. Risks also include: creation of a risk-acceptance culture by persons and units without the command responsibility and authority to accept risks; and inflicted risk when these network enclaves interconnect to the rest of the theater information grid and the Global Information Grid.

The authors developed and recommended to the DAA a staggered implementation plan to resource and execute formal, DIACAP-compliant C&A efforts for all of USARCENT's network enclaves. In this case the DAA simultaneously served as the USARCENT G6 and 335th SC(T) (P) commander. With the DAA's approval, USARCENT began its efforts in September 2008. Efforts continue to the present time expanding the formal C&A

activities maintaining the formal accreditations now in place.

One of the first challenges we faced was defining what network enclaves existed within USARCENT.

In the U.S. Central Command area of responsibility, USARCENT directly commands and controls almost a dozen posts, camps and stations (P/C/S). Each P/C/S has one or more classification domains for their network enclaves (e.g. NIPRNet, SIPRNet, and various flavors of Coalition Enterprise Information Exchange).

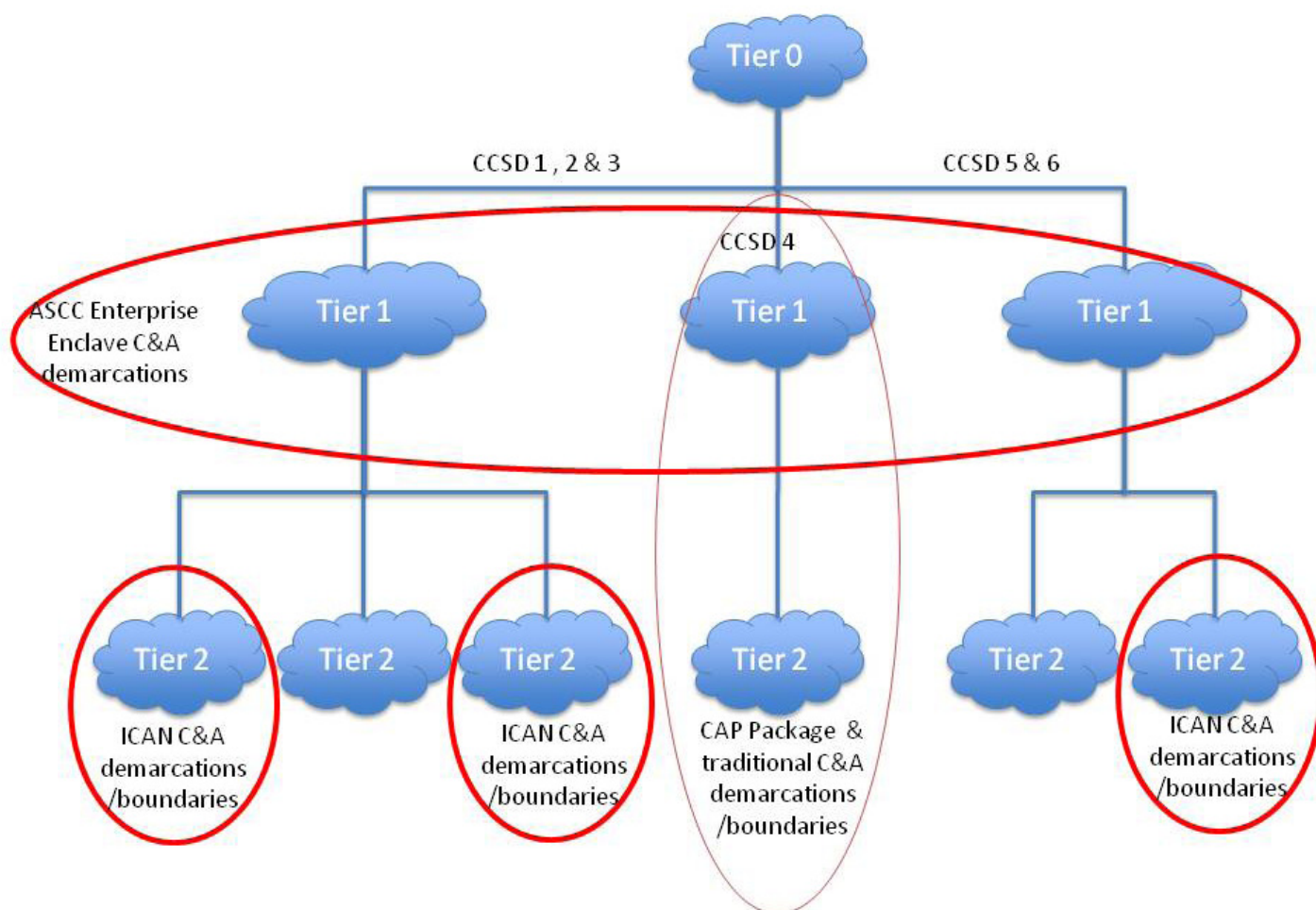
We used the existing circuit action process packages for the communications circuits connecting USARCENT to the GIG as the starting point for identifying our enclaves. The team was able to identify all the circuits feeding network capabilities into USARCENT as well as the existing network diagrams for

Tier 1 and Tier 2 enclaves. Figure 1 depicts, for operational security reasons, notional circuits between the Defense Information Systems Agency managed Tier 0 network cloud to the USCENCOM-managed, Southwest Asia Theater Network Operations Center operated Tier 1. Below Tier 1 are the individual P/C/S Tier 2 network enclaves operated by the 54th Signal Battalion and its assigned companies. An important note for readers: USARCENT does not have network enterprise centers or directorates of information management in any of its task organization documents or charts. USARCENT does have a supporting signal trace under a clear joint staff and USCENCOM directed line of command and control leading back to the ASCC commander.

With permission from the DAA, and the USCENCOM

IA manager, we aligned our accreditation (and future CAP actions as well) boundaries with the Army's Best Business Practice for the C&A of installation campus area networks. We did not align the enclave boundaries from Tier 1 through Tier 2 like CAP packages (the vertical oval in the center of Figure 1 encompassing command communications service designator 4). Instead, we choose to build a hierarchy of network enclaves. That hierarchy would allow lower levels to inherit IA controls from higher levels. We created a logical definition of the USARCENT NIPRNet enterprise enclave that became the top of our C&A hierarchy (the horizontal oval in Figure 1 encompassing all the Tier 1 touch points). The second, and lower tiers of our C&A

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(Continued from page 41)

hierarchy included each P/C/S' ICANs. The second tier also includes special purpose enclaves built by individual units or organizations that connected to the P/C/S ICANs.

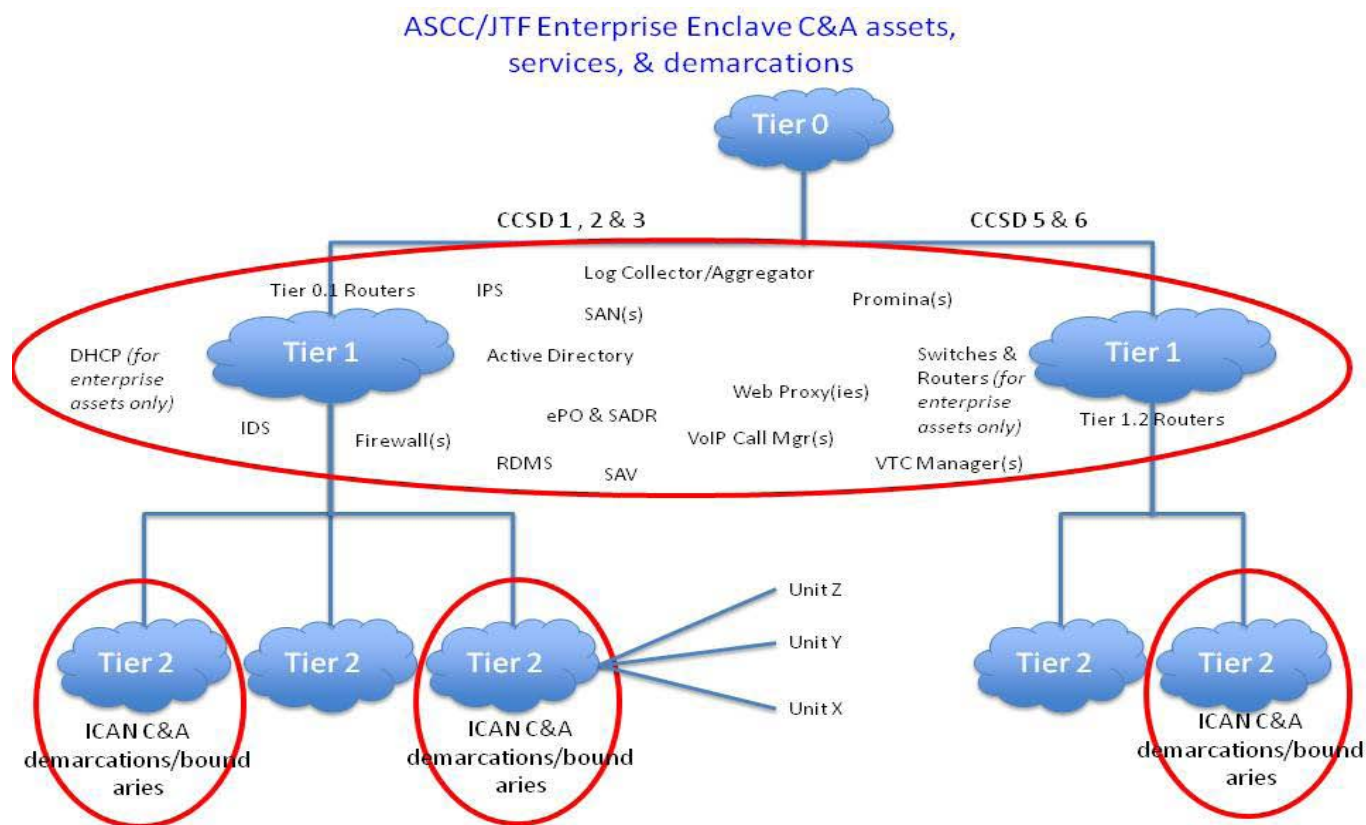
The logical demarcations for the enterprise enclave were simple in concept. The concept proved, initially, difficult for the USCENTCOM IA staff, Army Certification Authority, the Agent of the Certifying Authority, the supporting Signal units, and the contracted assessment team to grasp. This was the first time they had ever seen this deliberate construction of a C&A hierarchy. The rule of thumb was straightforward. Everything the SWA-TNOSC and Regional Computer Emergency Response Team-SWA directly managed for the benefit of the entire task organization was part of the USARCENT enterprise enclave. Anything below that was an ICAN. Figure 2 shows a representative sample of capabilities and network infrastructure that became the baseline for the USARCENT NIPRNet enterprise enclave.

USCENTCOM IA, the CA and the rest of the C&A community eventually concurred with our approach citing the future benefits. We expect

that future C&A efforts for each of the ICANs at the individual P/C/S will have a net reduction in labor and certification costs. ICANs will be able to inherit ASCC-wide IA controls, policies, and capabilities (e.g. network tactics, techniques, and procedures, perimeter protection, host/system protection). Cost reduction should be a key factor in future C&A efforts at USARCENT--due to the forward-deployed locations, visa requirements and other reasons, ACA visits to the USCENTCOM AOR were significantly more expensive than costs and estimates the authors, and others, previously experienced in the Continental United States.

We began the C&A effort by completing an initial ACA scoping questionnaire. The questionnaire allows an ACA to provide an informed estimate of resources they need (e.g. labor, travel, administrative costs). We then established a backward planning timeline to drive the completion of C&A for the NIPRNet and SIPRNet Enterprise Enclaves by July 2009 and January 2010, respectively.

For the 335th SC(T)(P) IAM and G3 then dedicated contractor support to provide the day-to-day execution of the preparations for the visit. The preparations included the following:



completing and finalizing the ACA scoping questionnaire; authoring and modifying the System Identification Profile; and authoring and maintaining a self-assessed DIACAP implementation plan. Preparations also include: authoring and maintaining a self-assessed DIACAP scorecard; authoring and updating the Plan of Actions and Milestones for known and discovered deficiencies; and coordinating interviews with personnel from SWA-TNOSC, RCERT-SWA, and 54th Signal Battalion Regional NOSC. USARCENT conducted the coordination with the ACA for their visit and kept track of progress to brief to senior leadership. USARCENT's Main Command Post in Atlanta also played a key role, even in the midst of its own C&A activities for its HQs ICANs. The MCP registered the Enterprise Enclaves into the APMS. Registration into APMS is critical to gaining access to the Army's CA and formalizing the entire C&A process.

A critical task for the C&A team was involvement of the ASCC Commander. The IAPM and DAA wanted the commander's direct involvement in establishing the Mission Assurance Category for his Enterprise enclaves. Anything less than MAC I entailed deliberate, informed acceptance of risk. Before the commander would do that, we had to provide information briefings and papers to refresh the key leaders' understanding of IA as well as mission assurance. Additionally, we had to explain, with specificity, the regulatory and doctrinal framework and requirements that, we believed, required the commander's personal involvement. The USARCENT commander signed the memorandum for record establishing the MAC level for the enterprise enclave and placed C&A status updates onto the calendar.

Another significant preparatory task was the collection of evidence and artifacts to substantiate the self-assessed score for the IA controls. In effect, the collection allowed the command to rehearse the data collection and interviews the ACA assessment team would execute. The enclave IA controls, over 100 of them, had assessment criteria that Soldiers who have executed ARTEPS and EXEVALS would, minus the technical jargon, instantly recognize. Each IA control is equivalent to an ARTEP task with accompanying conditions and standards. The tasks group were divided into eight categories, allowing the creation of eight books/collections of evidence. It was vital, in the teams' assessment, to prevent the generation of any one-off or just-for-the-assessment artifacts and documents. The team wanted evidence of the as-built, as-executed state of the network enclave, not specially created

artifacts that would not be accurate past the day of the assessment.

The final preparatory task under consideration here is the communications plan the C&A team executed. The communications effort was for the ASCC leadership, the supporting Signal commands' leadership and staff. It was also for the Soldiers, DA civilians and contractors that had built, operate and continue enhancing more than 30 USARCENT network enclaves. The communications plan had four goals. The first goal was to defeat the perception that the C&A effort was going to feed negative performance reports and impact contract performance awards. The second goal was to convince the day-to-day enclave operators and maintainers that C&A had to reflect what they actually did to allow the DAA to make informed decisions. The third goal was to convince leadership at all levels that discovered non-compliance with any particular control was a starting point for risk management and reduction. The final goal was to set the stage for the C&A effort to be sustainable and not a one-off bureaucratic paper drill.

The 335th SC(T)(P) contract support to the C&A effort, along with efforts by the SWA-TNOSC, RCERT-SWA, and the authors set the stage for the ACA visit to Kuwait in March 2009. The team of contractors conducted an in brief with the DAA, the USARCENT Deputy G6, the IAPM, the 335th SC(T)(P) G3, and the 160th Signal Brigade Commander. The USARCENT and 160th Signal Brigade IA staff then conducted an orientation briefing to the team. The ACA team had never, as noted above, experienced as complex of an environment as USARCENT faced. The weekly pre-arrival coordination teleconferences had not adequately conveyed the scope of the effort—a significant concern given USARCENT had more than 30 additional enclaves to accredit. The team adapted, and began their interviews, technical data collection and walk-through of facilities. The team also took possession of the artifact collections built before their arrival.

Interviews with technicians, Soldiers, and supervisory chains became the most interesting and challenging component of the assessment. The interviewees took to heart the authors' guidance to hold nothing back, hide nothing, and let the DAA know of every risk. The ACA team and the command discovered new areas of non-compliance and risks previously unknown. The DAA and IA program manager had expected discovery learning, what we had not anticipated

(Continued on page 44)

was the absence of interviewees that had gone through the preparations for the actual ACA visit. Those absences allowed an opportunity for the entire C&A team to discover that information flow and knowledge distribution within the visit participants was not optimal. We took that lesson and applied it to the subsequent ACA visit in December 2009 for the SIPRNet Enterprise Enclave. The out-brief was a testament to the dedication and professionalism of USARCENT's supporting signal units—there were no Category 1/Critical findings, a small number of Category 2 findings and the Category 3 findings were generally known due to the preparation prior to the ACA visit.

The post-assessment visit phase of the C&A was when the C&A team began the construction of the Plan of Actions and Milestones. The POA&M for a C&A package is the formal means by which the DAA tracks the status of risk reduction efforts. It's also the tool by which the DAA formally accepts by-item residual risks. The ACA team collaborated on the POA&M development, as a finalized and signed POA&M is a necessary part of their recommendation package to the Army CA. The CA, because of the Category 2 findings, recommended a six-month Interim-Authority to Operate. Using the authorities CJCSI 6510.01E enumerates, and with USCENCOM concurrence, USARCENT's DAA issued a three-year Authority to Operate. He also imposed a fast corrective POA&M for the Category 2 findings. This ATO was then a key component to achieving the first alignment of expiration dates for all of USARCENT's NIPRNet circuits with USCENCOM. That alignment greatly reduces the labor costs associated with recurring non-aligned CAP package submissions.

USARCENT has registered in APMS two of its Enterprise Enclaves and attained DIACAP-compliant ATOs for both. It, and its supporting signal units, must now transition to sustainment of those ATOs. USARCENT must also continue providing resources to its supporting signal commands to enable them to succeed at gaining DIACAP-compliant accreditations of the ICANs at each P/C/S. It remains to be seen whether USARCENT, in coordination with Army's CA, will develop its own ACA capability to dramatically reduce costs. Future rotations of USARCENT staff, IAPMs, IAMs, along with the supporting signal commands will assume the responsibility of helping the USARCENT Commander and DAA

conduct informed risk management and risk acceptance for his network enclaves.

For Army leaders to stimulate across the board improvement in adherence to policy and regulatory requirements, commanders and their DAAs will need help. There are few Soldiers as well positioned to provide that help as the officers in the Signal Regiment Functional Areas 24 and 53. We can, and must, change the common perceptions of IA and C&A. Unless you have your head buried in the sand, you most certainly have heard or been stymied by one of the common perceptions articulated that IA and C&A are: a task to avoid; a burden to starve of resources and interest; a paper-drill that is inaccurate the moment it completes; unresponsive to unforeseen requirements; unwilling to accept short-term risks; unable to transition between short-term risks and long-term risk reduction; incapable of communicating to operational force and maneuver commanders why particular (or general) computer network risks deserve their attention compared to the other risks they deal with every day; unable to communicate to specific commanders that it is their device(s) or Soldier(s) causing a problem; and finally, that computer network defense and security is the job of the "Six" so stop bothering the commander or the S3/G3/J3.

Here are some important points we offer to spark discussions on how to help both operational and non-operational commanders make better informed risk decisions for their supporting computer network enclaves.

- Incorporate attaining and maintaining DIACAP-compliant accreditations into theater Signal command and brigade leadership performance reports
- Explore the probability that military and DA civilian ACA teams are less expensive in the long term than contracting out services
- Formal DIACAP compliance in Coalition/Joint Task Force environments may not be possible, but informed risk management by the JTF Commander should still be feasible—weighed against other operational imperatives as the JTF commander assesses.
- Make C&A supporting processes (e.g. change management boards, configuration management boards, IAVA and system patching, requests for new capabilities/services, help desk/trouble ticketing systems) responsive to unforeseen needs. Key to this is changing the seemingly reflexive and automatic 'IA says no' to 'yes, and let's see how we can do it safely given our time and resource constraints.'

- Units should capture risk acceptance decisions in artifacts and documents. Doing so allows a continuity of knowledge and potential reduction in revisiting old issues when supporting/surround facts have not changed.

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Donald DeLaHunt, a retired U.S. Army veteran, is a Department of the Army civilian working as the IA manager for 160th Signal Brigade. He has 25 years of professional service to our Nation and four years directly supporting the IA initiative.

Michael Charbonneau, a retired U. S. Air Force master sergeant, is a General Dynamics IT contractor and was the DIACAP subject matter expert for the 160th Signal Brigade. He has over 25 years of experience in the network and IT arenas and 18 years experience on certification and accreditation efforts.

ACRONYM QuickScan

ACA – Agent of the Certifying Authority
APMS – Army Portfolio Management System
AOR – Area of Responsibility
AR – Army Regulation
ARTEP – Army Training and Evaluation Program
ATO – Authority to Operate
ASCC – Army Service Component Command
C&A – Certification and Accreditation
CA – Certifying Authority
CJCSI – Chairman of the Joint Chiefs of Staff Instruction
CND – Computer Network Defense
DA – Department of the Army
DAA – Designated Approving Authority
DISA – Defense Information Systems Agency
DoD – Department of Defense
FM – Field Manual
CA – Certifying Authority
CAP – Circuit Action Process
CCSD – Command Communications System

Designator
CENTRIXS – Coalition Enterprise Regional Information Exchange System
CONUS – Continental United States
DIP – DIACAP Implementation Plan
DOIM – Directorate of Information Management
EXEVAL – External Evaluation
GCTF – Global Counter-Terrorism Force
GIG – Global Information Grid
IG – Inspector General
RCERT – Regional Computer Emergency Response Team
SC(T)(P) – Signal Command (Theater)(Provisional)
IA – Information Assurance
IAM – Information Assurance Manager
IANO – Information Assurance Network Officer
IATO – Interim Authority to Operate
IAPM – Information Assurance Program Manager
ICAN – Installation Campus Area

Network
IP – Internet Protocol
IPR – In Progress Review
ISAF – International Security Assistance Force
JP – Joint Publication
MCFI – Multi-national Coalition Forces Iraq
MCP – Main Command Post
MDMP – Military Decision Making Process
MFR – Memorandum for Record
NIPRNet – Non-secure Internet Protocol Routing Network
P/C/S – Posts, Camps, and Stations
POA&M – Plan of Actions and Milestones
RNOSC – Regional Network Operations and Security Center
SIP – System Identification Profile
SIPRNet – Secure Internet Protocol Routing Network
SWA – Southwest Asia
TNOSC – Theater Network Operations and Security Center
TIG – Theater Information Grid
USARCENT – U.S. Army Central
USCENTCOM – U.S. Central Command

Lessons learned process ensures future operations build on successes

“Observations, insights, and lessons do not constitute lessons learned without changing individual, unit, or Army behavior, which is accomplished through the application of the Lessons Learned Process.”

AR 11-33, Army Lessons Learned Program

By Rick San Miguel

The Signal Center of Excellence lessons learned process assures that future operations are developed out of the documented best business practices, observations, insights and lessons from unit experiences. As we field new communications systems on the landscape of continually evolving technology, capturing OILs and BBPs is essential to ensure warfighters can plan, prepare and execute future missions successfully.

The modern battlefield is no longer just about weapons platforms. It is comprised of a variety of command, control, communications, computers, intelligence, surveillance and reconnaissance systems that provide the warfighter with the right information to the right person at the right time (situational awareness) almost instantaneously. These systems consist of military program of record systems and commercial off the shelf technologies that advance at a rate that exceeds current POR acquisition.

These technologies are in high demand from commanders at the tactical and strategic levels to mitigate current gaps. The advancement in information technology will continue to transform military communications. There is no doubt that the military will embrace all aspects of

communications technologies to provide the warfighter with the most reliable situational awareness systems on the modern battlefield.

The Signal Center of Excellence Lessons Learned Section documents the OILs from the experiences of the Signal Soldier on the tactical edge installing, operating and maintaining cutting edge communication systems. The intent is to identify the issues and provide the Soldier with a solution, TTP or BBP as soon as possible. However, lessons learned is not just about documenting OILs from IOM communication systems, it embraces how it applies to doctrine, organization, training, materiel, leadership and education, personnel and facilities.

- Doctrine – the way we fight
- Organization – how we organize to fight
- Training – how we prepare to fight tactically; basic training to advanced individual training, various types of unit training, joint exercises, etc.
- Materiel – all the “stuff” necessary to equip our forces, weapons, spares, so they can operate effectively.
- Leadership and Education – how we prepare our leaders to lead the fight from squad leader to four-star general; professional development.
- Personnel – availability of qualified people for peacetime, wartime, and various contingency operations
- Facilities – real property; installations and industrial facilities (e.g. government owned

ammunition production facilities) that support our forces.

The SLL analysts are knowledgeable in each domain to be able to identify and document the OILs during their visits to the unit during unit training events or scheduled unit umbrella weeks. OILs are documented, adjudicated and properly identified by a DOTMLPF category. Proposed solutions may involve a mixture of various categories of DOTMLPF and/or nonmaterial/materiel changes that may be considered to address capability gaps to effectively support the Warfighter. Figure 1, illustrates the codified process of collecting, analyzing, and disseminating approved LL, TTPs, and BBPs.

Signal Lessons Learned Process

The Signal Lessons Learned analysts collect, analyze, archive, and disseminate OILs, TTPs, and BBPs based on observations and lessons from actual military operations, training events, experiments, and initiatives. The following locations, websites, and forums outline where SLL analysts collect their Signal OILs.

Collect

Joint Readiness Training Center

The JRTC is one of the three CTCs that conduct tough, realistic, multi-echelon, joint and combined arms training to train leaders to deal with complex situations; to create flexible, skilled Soldiers; and

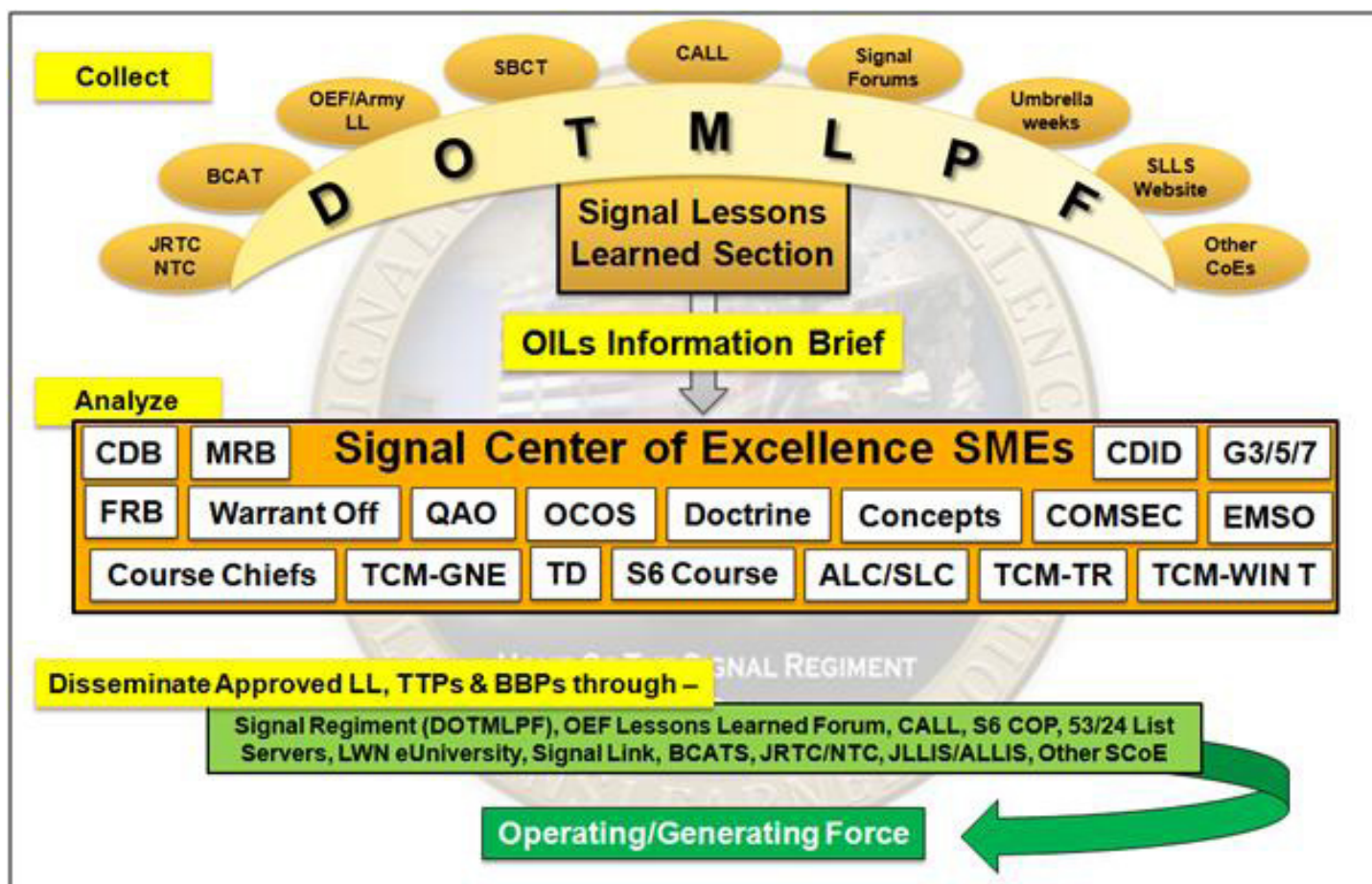


Figure 1. Collect – Analyze – Disseminate Codified Process Flow

develop highly proficient, cohesive units capable of conducting operations across the full spectrum of conflict. Training rotations are focused on the contemporary operational environment and counterinsurgency operations. <http://www.jrtc-polk.army.mil/OPS/index.html> The SLL analyst coordinates with the JRTC trainer/mentor and schedules visits during a unit's rotation in preparation for their upcoming deployments. The SLL analyst attends the units After Action Reviews (ARRs documents and discusses OILs with the S6 and Signal Soldiers.

National Training Center

Fort Irwin is the national training center for the Army. NTC provides tough, realistic, joint and combined arms training in interagency, intergovernmental and multinational venues across the spectrum of conflict in order to

prepare brigade combat teams and other units for combat. The SLL analyst coordinates with the NTC TM and schedules visits during a unit's rotation in preparation for their upcoming deployments. The SLL analyst attends the units After Action Reviews (ARRs documents and discusses OILs with the S6 and Signal Soldiers.

Joint Multinational Readiness Center

JMRC located in Hohenfels, Germany is flexible, adaptable and dual mission capable. From individuals to small units to brigade combat teams, JMRC trains Soldiers, joint forces and multinational partners. As the premier location executing Afghanistan pre-deployment and multinational training, coupled with our exportable training capabilities, the JMRC is leading the Army in training

transformation and preparing for the future. While the SSL has not participated in a unit's rotation at JMRC the process is set. An SSL would coordinate with the NTC TM and schedule visits during a unit's rotation in preparation for their upcoming deployments. The SLL analyst attends the unit's after action reviews (ARRs documents and discusses OILs with the S6 and Signal Soldiers.

Signal Support Teams/Battle Command Assistance Teams

Training a unit's Signal Soldiers to be the trainers, while simultaneously ensuring the unit's S6 section has the requisite skills, abilities and knowledge to guarantee mission success across the formation, is what FORSCOM's specialized, mobile training teams are all about. These teams, called

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Signal support teams, first fielded in 2009, are staffed with Signal professionals who understand the challenges faced by other Army communication professionals at all levels.

Army Lessons Learned Forum

The Army Lessons Learned (formerly Operation Enduring Freedom) forum was established to resolve issues and accelerate rapid adaptation of OILs, TTPs, and BBPs across DOTMLPF through the levels of war and between the operating and generating forces to enable continuous improvement of Army forces in support of OEF. The SLL analyst participates in the Action Officer that receives, reviews topics/issues, development of remedial action plans

Stryker Brigade Combat Team Umbrella Weeks

A team of representatives from TRADOC, the Stryker Warfighter's Forum, Program Manager Stryker Brigade Combat Team and other participating agencies led by the TRADOC capability manager, Stryker brigade combat team, conduct a series of structured interviews and survey sessions with leaders and Soldiers recently returning from their deployments. The 4-day conference is conducted in order to collect observations, insights, data and lessons learned for analysis and incorporation into ongoing revisions of field manuals, materiel programs/systems and various training and leader development programs of instruction. Discuss leader and Soldier experiences to gain insights and collect data covering all aspects of DOTMLPF as it relates to the planning, preparation and execution of operations and to rapidly pass critical lessons to TRADOC COEs and other SBCTs preparing for future deployments.

Unit Umbrella Weeks

The Signal Lessons Learned Section participates in unit umbrella weeks being hosted by the unit recently returning from OIF/OEF.

Center for Army Lessons Learned

The Center for Army Lessons Learned rapidly collects, analyzes, disseminates, and archives OILs, TTPs and operational records in order to facilitate rapid adaptation initiatives and conduct focused knowledge sharing and transfer that informs the Army and enables operationally based decision making, integration, and innovation throughout the Army and within the JJIM environment. Open the CALL Web site <http://call.army.mil>. Individuals requiring additional information, articles, publications, or research material may request them at the CALL RFI site, located at this address: <https://call-rfi.leavenworth.army.mil/rfisystem>

of Purpose, Spectrum forums to capture and document OILs, TTPs and BBPs.

Signal Lessons Learned Section Website

The SLLS website is located at <https://lwn.army.mil> hosted by LandWarNet eUniversity. It is the Signal Soldier point of contact at the Signal Center of Excellence pertaining to unit OILs, TTPs, and/or BBPs. Documented OILs from units visited by the SLL analysts are posted on the website. The SLLS also administers/monitors a variety of forums for users to query specific OILs, TTPs, BBPs or other request for information. Objective: To rapidly resolve OILs and disseminate TTPs and BBPs to the Signal Regiment.

Other Centers of Excellence

Coordination with the other CoE's to document the Signal concerns they encounter during their unit collections.

Signal Forums

Monitor Signal Forums on LWN eUniversity, S6 Community

Analyze

Subject Matter Experts
SME's from the Signal Center

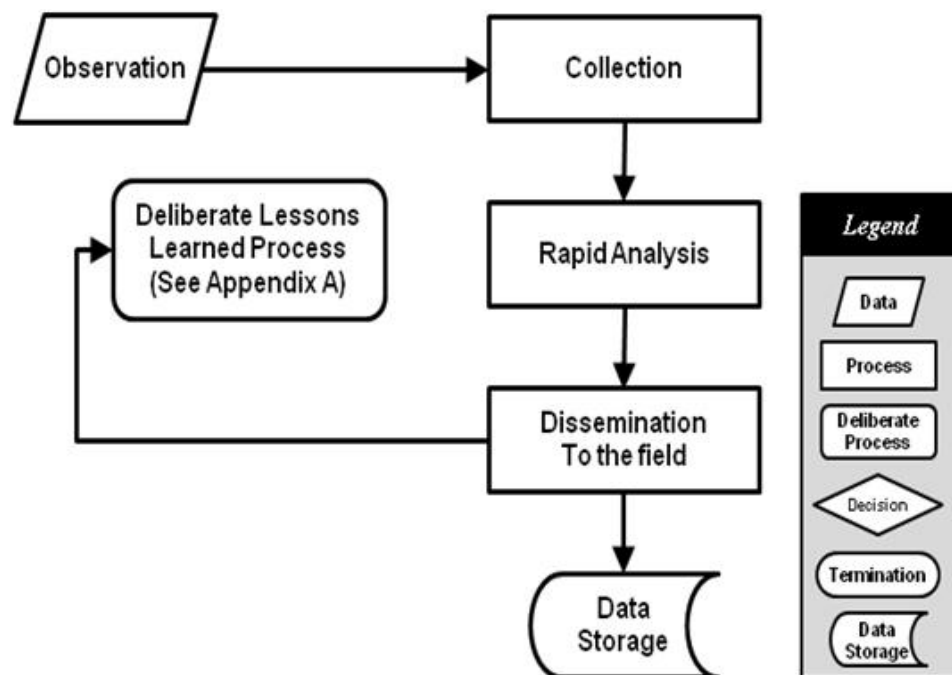


Figure 2. Rapid Lessons Learned Process, AR 11-33

and the school house have the opportunity to review and provide comments to the documented unit OILs, TTPs and or BBPs from units returning back from deployment (unit umbrella weeks) or from unit rotations at JRTC/NTC in preparation for deployment, (See Figure 1, Collect – Analyze – Disseminate Codified Process.) By analyzing the OILs the Signal Regiment determines how to sustain, enhance, and increase its preparedness for future operations, or provide a materiel or non materiel solution. The SLL analyst contacts/coordinates with the SME's based on DOTMLPF to discuss, coordinate and resolve the OILs so they can be rapidly disseminated back to the Warfighter. The proponent validates the OILs, TTPs and BBPs pertaining to their domain and develops the DOTMLPF solutions effecting change immediately and accurately. In the event an OIL, TTP or BBP affects other branches or functions; such as, a critical safety issue, the SIGCoE commanding general is notified and the OIL is forward to CAC and TRADOC so they can take charge of the issue, assign lead and supporting agents, and organize the efforts of the various branch proponents that may be affected.

Disseminate

Recommended OILs are disseminated through Signal Regiment, Army (formerly OEF) Lessons Learned Forums, Center for Army Lessons Learned, S6 Community of Purpose, 53/24 List Servers, LWN eUniversity, Signal Link, FORSCOM, combat training centers, Joint Lessons Learned Information System and other centers of excellence. If applicable updates are made to doctrine, training, and force design (materiel, organization, and personnel).

Signal Lessons Learned



Figure 3. Signal Lessons Learned website homepage is a representation of the homepage of the Signal Lessons Learned website hosted by LandWarNet eUniversity, <https://lwn.army.mil>.

Process

“We are not here to evaluate you, but for you to evaluate how well we have trained and equipped you to accomplish your mission.”

“The lessons learned process is a deliberate and systematic process for collecting and analyzing field data and disseminating, integrating, and archiving observations, insights, and lessons collected from Army operations and training events. Information gathering will be integrated into DOTMLPF, research (industry and academia), development, acquisition, and planning activities in order to sustain, enhance, and increase the Army's preparedness to conduct current and future

operations. The process is solution-oriented. It is designed to support organizations at all levels of command and staff and can be adapted for use in all operations, to include combat, training, maintenance, installation support, experiments, and equipment fielding.” AR 11-33, Army Lessons Learned Program.

I quoted the LLP directly from AR 11-33, because it clearly articulates the LL process from being a deliberate and systematic act of collecting OILs to improve the Army's overall effectiveness in each DOTMLPF domain. The SIGCoE Lessons Learned Process was developed with the same continuity as the Army LLP, using:

- AR 11-33, Army Signal Lessons

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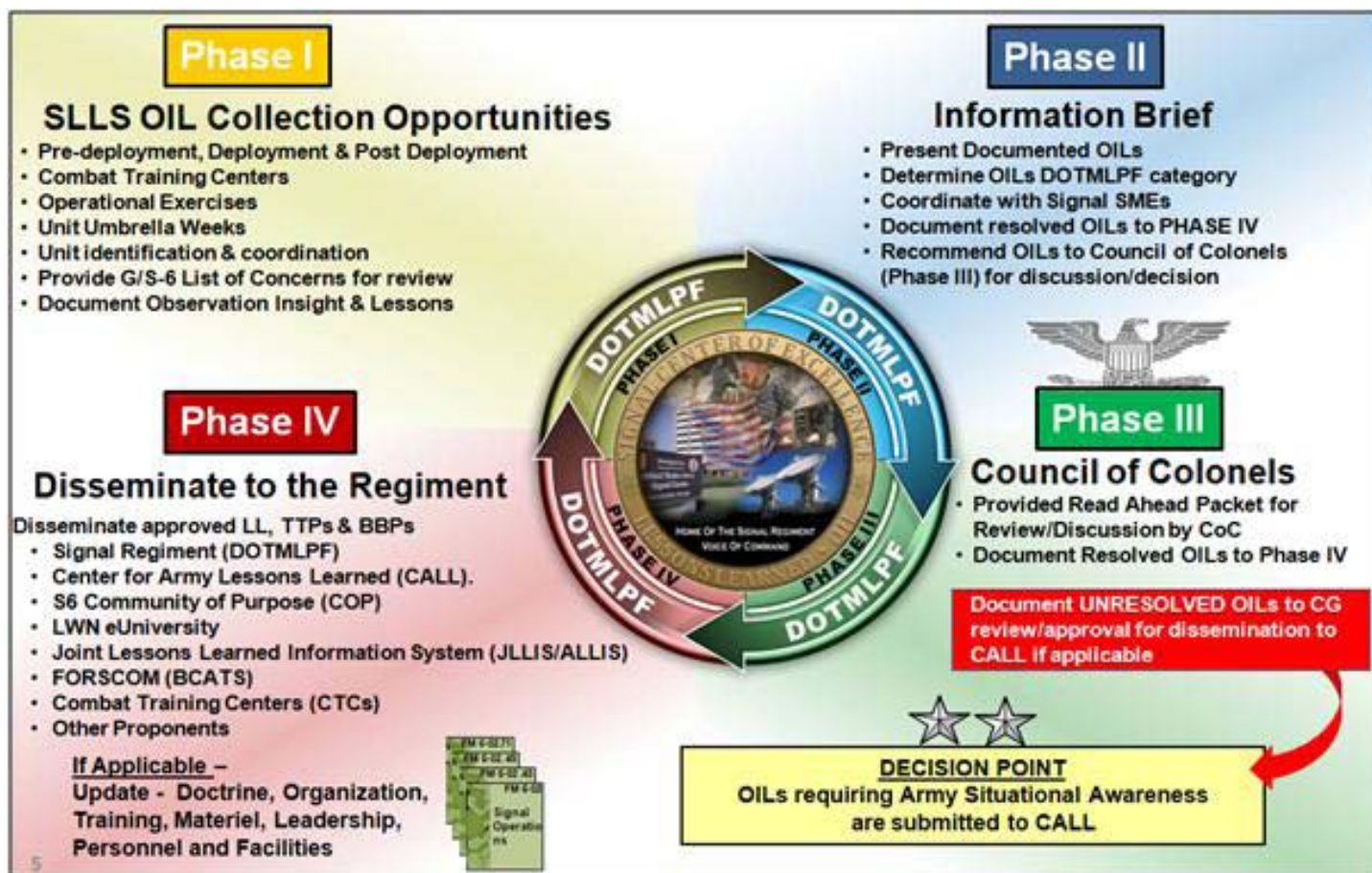


Figure 4. SIGCoE Lessons Learned Four Phase Process

(Continued from page 49)

Learned Process

- Center for Army Lessons Learned
- Joint Lessons Learned Information System
- TRADOC Capabilities Manager-Stryker Lessons Learned Program
- Other Center of Excellence Lessons Learned Programs

Note: The Signal Lessons Learned Process does not replace, AR 11-33, Army LLP.

The SIGCoE SLLS developed a four phase process which is very similar to the rapid lessons learned process depicted in figure 4-2, of AR 11-33, ALLP (see Figure 2) being used to document DOTMLPF OILs that directly impact the Signal Regiment.

The Signal Lessons Learned Four Phase Process as depicted

in Figure 4 (above) is very similar to the rapid lessons learned process: Collection and Observation – Phase 1, SLLS OIL Collection Opportunities; Rapid Analysis – Phase 2, SLL Advisory Board; Dissemination to the Field – Phase 4, Dissemination to the Regiment; Data Storage – The Signal Lessons Learned Website <https://lwn.army.mil>. In addition, the Signal Lessons Learned Process added an additional step, Phase 3 that includes a Council of Colonels for issues that require leadership approval that may affect the Army or various branch proponents. The Signal Lessons Learned Four Phase Process is described below:

Phase I

SLLS OIL Collection Opportunities

The SLL analyst coordinates

Phase II

Advisory Board

The purpose of the advisory board is to provide the SIGCoE

with the unit, combat training center's (joint readiness training center) and the national training center) or is contacted to attend an umbrella week from a unit that has recently returned from Operation Iraqi Freedom/ Operation Enduring Freedom. The SLL analyst coordinates with the unit by an initial visit, teleconference, and/or VTC. The purpose is to establish contact, coordinate dates and develop a rapport with the unit S6, Signal Company Commander, and Signal Soldiers. A list of concerns/questions, derived from trend analysis or DOTMLPF SME input, is provided for the unit to review as an aid to facilitate discussions.

subject matter experts an opportunity to listen to what Signal Soldiers have shared based on experiences and to review/ discuss recently documented OILs. In some cases the unit will send representatives to Fort Gordon to participate directly in the advisory board, other times they teleconference during the board. As a last resort the SLL analyst presents the unit's concerns/issues to the advisory board.

During the board, OILs are determined to either affect the Signal Regiment or are unit/theater specific to the mission. If the OIL is determined to be unit/theater specific, they are cataloged by DOTMLPF. If the OIL is determined to affect the Army/Signal Regiment the SLL analyst will coordinate with the SIGCoE SMEs to achieve the best possible solution/recommendation.

The results of the OILs are presented during the next Advisory Board and published on the SLL Website. Any OILs that cannot be resolved are recommended to a Council of Colonels (Phase III). Documented resolved OILs as LL, TTPs and BBPs are recommended for Dissemination (Phase IV).

Phase III

Council of Colonels

The CoC is chaired by the CDID Directorate to review/ discuss recommended OILs from Phase II of the SLL Process. Resolved OILs are recommended for dissemination as a LL, TTP or BBP. Unresolved OILs are recommended for the commanding general, Chief of Signal's review and recommendation.

Phase IV

Disseminate to the Regiment

OILs that have been recommend for dissemination are disseminated through the following: Signal Regiment, Army (formerly OEF) Lessons Learned Forum, Center for Army Lessons Learned, S6 Community of Purpose, 53/24 List Servers, LWN eUniversity, Signal Link, FORSCOM, combat training centers, Joint Lessons Learned Information System, other centers of excellence. If applicable update doctrine, training, and force design (materiel, organization, and personnel). The Signal lessons learned advisory boards are held the first Tuesday of each month.

Documenting OILs is of vital importance to improve and update doctrine for current and future deployments, organizational force structure, training methods, materiel and non materiel solutions, leadership and educational skills, Signal personnel assignments, and tactical and strategic facilities. The SLLS will document unit OILs capturing relevant LL, TTPs, BBPs and accelerate them across the operating and generating forces to enable continuous improvement of the Signal Regiment.

Rick San Miguel is a Department of the Army civilian and presently holds the position of the Signal Lessons Learned coordinator / doctrine writer, G3/5/7, U.S. Army Signal Center of Excellence, Fort Gordon. His background spans 36 years of service to the Signal Regiment.

Join the Discussion
<https://signallink.army.mil>



ACRONYM QuickScan

AAR - After Action Reviews
ALLIS - Army Lessons Learned Information System
AR - Army Regulation
ALLP - Army Signal Lessons Learned Process
BCAT - Battle Command Assistance Teams
BBP - Best Business Practices
CALL - Center for Army Lessons Learned
CoE - Centers of Excellence
C4ISR - Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance
CAC - Combined Arms Command
CG - Commanding General
COTS - Commercial off the shelf
CAC - Common Access Card

COP - Community of Purpose
COC - Council of Colonels
CBT - Computer Based Training
DOTMLPF - Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities
FORSCOM - Forces Command
GOSC - General Officer Steering Committee
IOM - Installing, operating and maintaining
JLLIS - Joint Lessons Learned Information System
JRTC - Joint Readiness Training Center
LWN - LandWarNet
LL - Lessons Learned
LLP - Lessons Learned Process
NTC - National Training Center
OILs - Observations, insights, and

lessons
OEF - Operation Enduring Freedom
OIF - Operation Iraqi Freedom
POR - Program of record
SIGCoE - Signal Center of Excellence
SSL - Signal Lessons Learned
SLLS - Signal Lessons Learned Section
S6 - Signal Officer
SST - Signal Support Teams
SBCT - Stryker Brigade Combat Team
SME - Subject Matter Expert
TTP - Tactics, techniques and procedures
TM - Trainer/Mentor
UM - Umbrella week
VTC - Video Teleconference

Ending the Iraq mission

By CPT Chase A. Hasbrouck

Longfellow famously wrote, "Great is the art of beginning, but greater is the art of ending."

On 23 April 2011, the 62nd Expeditionary Signal Battalion began writing its own ending as the final ESB deployment in support of U.S. Forces-Iraq's communications requirements.

As the first 100 days of the deployment draws to a close, it's instructive to look back and determine the lessons learned.

Pre-deployment

After completing our

combined training exercise in January 2011, we turned our full attention to the upcoming deployment. One of the advantages of deploying to a mature theater like Iraq was the wealth of assistance that was provided by the unit we were relieving, the 40th ESB. After studying several plans, we adapted a geographical model similar to 40th's, with each expeditionary Signal company responsible for providing signal support to one of three distinct regions within the Iraqi Joint Operations Area. Due to the quantity and dispersion of

our Signal sites, we adopted a decentralized model, with each ESC standing up a combined company OPS/NETOPS cell that handled reporting and network outages. This was necessary due to one of the challenges present in the Iraqi theater, where we had requirements to support both divisional and USF-I networks.

After an initial adjustment period, this model worked well. The battalion's handling of the planning enabled small-unit leaders to focus on training their Soldiers. This training was crucial because of the wide-scale



CPL Kari Anglin, 40th Expeditionary Signal Battalion, disconnects a generator at Victory Base Camp in Iraq in September 2011 prior to a STT's redeployment.

use of commercial equipment in theater. While the majority of our mission involved support for a conventional satellite infrastructure, we also had a significant number of LOS IP radios instead of conventional mil-spec LOS's, and custom-built TCF's instead of JNN's. Fortunately we obtained a small number of IP radios prior to the deployment to train our battalion network engineers, who then provided setup and operation instructions. While this led to IP radio troubleshooting mostly being performed at the battalion level, the systems worked well enough that the additional workload was minor.

One small confounding factor was network management. The IP radios used a custom Web interface for configuration that was incompatible with the version of Internet Explorer used in theater. Ultimately, we resolved this by installing an alternate browser on selected computers. This caused persistent IA difficulties.

The most pressing issue we tackled was planning equipment containerization and movement. This was the issue that caused our company commanders the most headaches, and caused us to learn several painful lessons. First, we learned that spending adequate time preparing accurate DA Form 1750's (packing lists) and load plans is essential. The commanders that dedicated necessary time accomplishing this task ended up saving inordinate amounts of time downrange conducting their cyclic and sensitive items inventories. A corollary to this was to keep inventory requirements in mind when determining equipment destinations. A few sub-hand receipt holders found their equipment dispersed to multiple

sites, which led to avoidable time and expense costs. Conducting a "LOADDEX" also helped. Many commanders discovered that they needed more containers than expected.

Second, we learned that having multiple unit movement officers embedded at the company level helped tremendously. The sheer quantity of equipment moving in theater necessitated a decentralized movement plan, with each company UMO responsible for that company's movement. UMO's were kept very busy, and having extra personnel to assist kept things moving.

Finally, we learned that it was important to keep flexibility in mind when planning allocation of spares. Delivering spares to a small contingency operation site is not a speedy process. For theater movement, we were reliant on other units which sometimes allocated only one convoy per week. It was critical that smaller bases receive priority for spares fill, in order to prevent outages caused by malfunctioning equipment.

Deployment

Once our battalion arrived in theater, we faced immediate hurdles. The ship delivering our equipment was delayed by several weeks, causing our carefully constructed timeline to disintegrate. We had planned for a two-week validation period for each assemblage and team upon arriving in country. Instead of pushing deadlines even later, we elected to ship the equipment immediately to its final destination, skipping our planned SWITCHEX. While we narrowly made all our movement deadlines (several teams from the 40th ESB conducted their RIP with our team immediately on arrival, and left soon thereafter),

we had several initial problems with network configurations which normally would have been resolved during the SWITCHEX. Soldiers from the 40th ESB helped us resolve all the concerns and problems.

The issues were exacerbated by the multiple-network configurations discussed above. In a few instances, our battalion NETOPS section was reduced to communicating with a site by text messages sent via Blue Force Tracker to a nearby BFT-equipped unit. While conducting troubleshooting in this manner was excruciating, we successfully worked out the problems and got all systems successfully online. This underlines the need for good relationships with supporting units. Without their assistance, we would not have been able to communicate with our communications team at all. Compounding the problem was the dual reporting chain. Several of our sites were under the tactical control of another unit and reported to them, but still relied on us for spares and troubleshooting assistance. While this problem was quickly resolved, we determined that this is an element that should have been introduced into our pre-deployment CTE.

Once we were in-place and established operations ran smoothly. As we had predicted, we suffered several equipment failures over the initial weeks of operation, mostly due to heat-related issues. ECU systems and HPA's were the most likely to fail, though we suffered several generator problems as well. Thinking about issues like cooling and power may sound plebian to some, but our experience was that cooling and power problems were vastly more numerous than network

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and connectivity problems. We mitigated this by deploying extra spares to sites and ensuring our C&E warrant officer was closely tied in to our NETOPS for prompt action.

Finally, one continuing issue was equipment movement. It was far too easy to become overly reliant on RFID tracking in order to track the locations of our containers. On several occasions, we had RFID tags fall off or stop transmitting. We ensured we had LNO's at all major transportation hubs who could confirm the presence or absence of equipment at the site. Retrograde

From the start, we knew that we'd have to plan for our departure while planning our arrival, due to the compressed timeline of the mission. This was confirmed when we arrived. Many commanders aggressively pursued their base closure plans, frequently requesting (and receiving) permission to close bases weeks or months

in advance. Being prepared in advance with a retrograde plan and forming good relationships with the supporting unit on the base is essential. There are many elements that have a hand in the plan. The base command team or mayor's cell, the CRSP yard, the RPAT yard, the TACON unit's headquarters, etc. are all involved. A proactive commander ensures his ideas are represented. A non-proactive commander will have his retrograde planned for him. This generally leads to a less than ideal outcome.

Aggressively disposing of excess equipment (either via turn-in or return to home station) is important because it will speed your clearance when the departure day comes. As can be expected in a mature theater like Iraq, our units signed for significant amounts of theater provided equipment. Do not delay in the process of turning in TPE. The line at the RPAT yard gets longer as departure day comes closer.

Conclusion

While we have faced several challenges, we have defeated them all and become a stronger unit for it. We are approaching our "crunch time," as we tag in to provide communications support to many bases decommissioning strategic assets. Based on the obstacles we've overcome so far, I'm confident that we will continue to adapt and overcome, providing a world-class level of communications support to troops in theater. "Forewarned is Forearmed!"

CPT Chase A. Hasbrouck is currently serving as the information systems manager for the 62D Expeditionary Signal Battalion, currently deployed to Iraq in support of Operation New Dawn. Prior to this assignment, he attended Signal Captain's Career Course and the Information Systems Manager Course at Fort Gordon, Ga.

ACRONYM QuickScan

BFT - Blue Force Tracker
ECU - Environmental Cooling Unit
ESB - Expeditionary Signal Battalion
ESC - Expeditionary Signal Company
C&E - Communications and Electronics
COS - Contingency Operation Site
COTS - Commercial off the Shelf
CRSP - Central Receiving and Shipping Point
CTE - Combined Training Exercise
HPA - High Power Amplifier
IA -- Information Assurance
IP - Internet Protocol

LNO - Liaison Officer
LOS - Line-Of-Sight
NETOPS - Network Operations
RFID - Radio Frequency Identifier
RPAT -- Redistribution Property Assistance Team
SWITCHEX - Switching Exercise
TACON - Tactically Controlling (unit)
TCF - Technical Control Facilities
TPE - Theater-Provided Equipment
UMO - Unit Movement Officer
USF-I - United States Forces-Iraq

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TCM update

Updates from Training and Doctrine Command capabilities managers for networks and services and Warfighter Information Network-Tactical

TCM-TR

Army Positioning, Navigation and Timing Assurance Plan

TRADOC Capability Manager-Tactical Radio and Army Product Director for PNT are leading efforts to assist the Army with planning and execution of an Army PNT Assurance migration plan.

This plan includes the modernization of current user equipment which relies on the Selective Availability, Anti-spoofing Module security architecture, migration to Military Global Positioning System User Equipment, and the use of advanced antennae technology and micro-electromechanical inertial measurement units to provide assured PNT where space based or other radio frequency emitters fall short.

SAASM based equipment modernization efforts currently being considered include a PNT HUB, which would be used to replace Defense Advanced GPS Receivers that are being used in lieu of embedded Ground Based-GPS Receiver Application Module.

The PNT Hub would provide PNT output that could be tailored to specific requirements of multiple on-board systems. Analysis is currently being conducted to determine potential cost savings to the Army through implementation of this technology solution. TCM TR and PD PNT also conducted Unit visits from 30 Aug – 1 Sep 2011 with HQ USAREUR, 173rd Airborne Brigade Combat Team, and 2nd Stryker Cavalry Regiment. The purpose of the visit was to provide commanders information briefs with regard to PNT threat, PNT Assurance, and GPS M-Code migration. In addition, informal interviews were conducted with leaders and soldiers to gain insight on their PNT needs and how current capabilities were being utilized. Supported activities included office calls with United States Army Europe Deputy Commander, G3, and G2; Officer Professional Development discussion with USAREUR NAVWAR Working Group, field training site visit to 173rd ABCT and office call with Commander 25CR.

MGUE, which will be designed to receive the new signal in space, named Military Code, from

the GPS III constellation which will provide higher power signal and M-Code will enable stronger encryption less susceptibility to jamming, spoofing, and electromagnetic interference. The first M-Code receivers are expected to be available in 2017. GPS III and MGUE are currently anticipated for full operational capability in 2025. TCM TR and PD PNT are working closely with Air Force Space Command A5 and the GPS Directorate to ensure Army requirements are documented and addressed in capability and technical documentation.

The PNT Assurance Initial Capabilities Document was approved in April 2010. TCM TR was instrumental in supporting and preparing for the Material Development Decision in September 2011 that officially kicked off the Army PNT Assurance Analysis of Alternatives. The AoA will provide analysis (effectiveness and cost) that will determine optimum solutions for PNT assurance for 2015 to 2025. The AoA will address the viability of current and emerging technologies to provide PNT information under conditions where GPS is not available such as advanced antennae technology, pseudo-satellites, Radio Frequency Navigation, and Autonomous (e.g., Inertial, MEM IMU, Dead Reckoning) technologies. This study will result in recommendations to Army leadership for the future of tactical assured PNT.

TCM-GNE

Host-Based Security System

The HBSS Concept of Operations developed by the Army Signal Center is nearing completion, providing a foundation for the installation of HBSS on tactical systems. The HBSS baseline is a flexible, commercial off the shelf-based application that monitors, detects, and counters against known cyber-threats to Department of Defense Enterprise. HBSS is mandated by The U.S. Cyber Command and the HBSS installation will occur on all Assistant Secretary of the Army for Acquisition, Logistics and Technology assets (unless waived). The Program Executive Office for Command, Control and Communications-Tactical will provide HBSS installation and training for all ASA(ALT) clients on all Southwest Asia tactical unit equipment beginning in October 2011 and

continuing through February 2012. POC: James Hart, DSN 780-6885, james.hart1@us.army.mil.

LandWarNet Initial Capabilities Document

The LWN ICD, which describes the direct and supporting capabilities of the Army Enterprise Network at and above the Combined/Joint Task Force, "outside the tactical formation," was approved by the Army Capabilities Integration Center Director, LTG Keith C. Walker, on 23 October 2011. Once the ICD is Joint Requirements Oversight Council - approved, the Army can begin to establish a single, secure, standards-based, versatile infrastructure linked by networked, redundant transport systems, sensors, war fighting and business applications, and data to provide Soldiers, civilians and mission partners needed information in any environment. POC: Brad Ashing, DSN 780-6901, jeremiah.ashing@us.army.mil.

Enterprise Terminals Modernization

The MET, AN/GSC-52B, will be used to support U.S. DoD, allied and Government X- and Ka-Band communications requirements using the Wideband Global Satellite, Defense Satellite Communications Systems satellites, and XTAR satellites. The MET Program will extend the life of the current Enterprise Terminal Family, reduce life cycle costs, and integrate these terminals with the Global Information Grid communications infrastructure. The first AN/GSC-52B terminal installation is scheduled to begin 1 December 2011 at Fort Detrick, MD. POC: Bob Finnegan, DSN 780-3408, Robert.finnegan1.civ@mail.mil or Frank Stein, DSN 780-6286, frank.stein@us.army.mil.

Electromagnetic Battle Management System/Coalition Joint Spectrum Management Planning Tool

The EMBMS (formerly known as CJSMPPT) was developed to provide a capability to deconflict the Radio Frequency interference effects of Counter Remote-Controlled Improvised Explosive Device Electronic Warfare systems on communications and other friendly radio operations. It performs electromagnetic spectrum operations mission planning for all force levels from tactical through Joint Task Force, with an emphasis on the Brigade Combat Team level. The EMBMS is a stand-alone application targeted for use by the Electromagnetic Spectrum Manager, Army MOS 25E, as well as the spectrum management professionals from the other Services, and civilians. It operates on a laptop over the SIPRNET. To date, approximate 150 personnel from all branches of Service, including civilians, have received training on EMBMS.

The current version, 2.1.1, has been trained and fielded to two units who are currently deployed in Theatre or deploying in the near future. The EMBMS is undergoing further development to enhance both its spectrum management capabilities and the capability to identify and mitigate or eliminate the effects of jammers on friendly systems. Version 2.1.2 is a complete redesign of the user interface with many added capabilities and enhancements. It is currently under development with a tentative release of 4th QTR FY12.

An Army test of the application is planned during the Network Integration Evaluation 12.2 in the 3rd QTR FY12 at Fort Bliss, Texas. POC: Shawn Sweeney, DSN 780-3947, shawn.patrick.sweenet@us.army.mil.

ACRONYM QuickScan

ARCIC - Army Capabilities Integration Center
ASA(ALT) - Assistant Secretary of the Army for Acquisition, Logistics and Technology
BCT - Brigade Combat Team
C/JTF - Combined/Joint Task Force
CJSMPPT - Coalition Joint Spectrum Management Planning Tool
CONOPS - Concept of Operations
COTS - Commercial off the shelf
CREW - Counter Remote-Controlled Improvised Explosive Device Electronic Warfare
CTSF - Central Technical Support Facility
DoD - Department of Defense

DSCS - Defense Satellite Communications Systems
EMBMS - Electromagnetic Battle Management System
ESM - Electromagnetic Spectrum Manager
GIG - Global Information Grid
HBSS - Host-Based Security System
ICD - Initial Capabilities Document
JROC - Joint Requirements Oversight Council
JTF - Joint Task Force
LWN - LandWarNet

MET - Modernization of Enterprise Terminals
NIE - Network Integration Evaluation
PEO C3T - Program Executive Office for Command, Control and Communications-Tactical
RCIED - Remote-Controlled Improvised Explosive Device
RF - Radio Frequency
SIPRNET - Secure Internet Protocol Router Network
TCM GNE - TRADOC Capability Manager, Global Network Enterprise
WGS - Wideband Global Satellite

WIN-T Way-Ahead

Recently, Army leadership has challenged us to sustain our force and to provide depth and versatility to the joint force. The effectiveness of our future employments will be marked by the flexibility of our communications systems supporting strategic and tactical leaders. Army senior leadership has recognized that the cornerstone of modernization is the network.

The Warfighter Information Network-Tactical program of record is proving its relevance by changing and evolving in fielding greater at-the-halt network capacity as well as timely advances in on-the-move technology.

The WIN-T Increment 2 Production Qualification Test-Government, or PQT-G, was the major developmental test leading to the upcoming operational test and fielding, which is expected in FY 2013. The PQT-G was the largest instrumented test ever held at the Aberdeen Test Center. During the six-week event, hundreds of personnel collected thousands of gigabytes of data on the network's performance. Data collected included how fast messages travel, how reliably they arrive at their destination, throughput assessments and whether the network is successfully prioritizing urgent

messages ahead of routine data traffic. The PQT-G was based on an operational mission set that is fundamentally built around the unit structure of 2nd Brigade, 1st Armored Division.

During the spring of 2012, WIN-T Increment 2 Initial Operational Test and Evaluation will be conducted at White Sands Missile Range, N.M., with 2/1 AD as the test unit and as part of the Network Integrated Evaluation 12.2. While Increment 2 is focused on providing the fundamental technical functionality for mobile networking, upcoming technical inserts and the addition of Increment 3 to WIN-T's capabilities listing will allow the network to adapt to changing future mission parameters and conditions.

Planned improvements to WIN-T transmission systems include but are not limited to: increased SATCOM capabilities, new radio designs for aerial and terrestrial platforms, smaller form factors of complete configuration items for specialized units, new antenna technology and designs, and increased network operations applications and techniques.

Documentation for these improvements will likely be in the format of complementary ACAT III Capabilities Production Documents within

the TRADOC community and forwarded to the Army Staff. Alternate means of procuring these improvements could include directed decisions from the program's Configuration Steering Board or by Engineering Change Proposals within an increment's program acquisition management.

Increment 3 of WIN-T is tentatively scheduled to begin fielding in the FY2018-19 timeframe.

Discussions are underway to correctly scope the entire effort to effectively modernize the critical aspects of future tactical networks as well as integrate stand-alone technologies, like cellular, into the WIN-T system of systems. Documentation of Increment 3 requirements will re-start in 1st Qtr FY2012. (Army leadership had discussed the possibility of not continuing the WIN-T increments past Increment 2) Recent determinations are aligning resources and the TRADOC requirements/architecture will be major supporting documents for the Increment 3 development.

Major technologies that will be milestones of achievement for the network in Increment 3 are the arrival of the WIN-T Wide Area Network aerial tier (to complement the terrestrial and satellite tiers) and fully integrated Network Operations.

30th Signal Battalion units named maintenance excellence finalists

By CPT David Richards

All three of 30th Signal Battalion's subordinate units were named finalists, on July 15, for this year's Army Award for Maintenance Excellence competition, at the 311th Signal Command (Theater) level.

Company A won the Modified Table of Organization and Equipment Medium category, Headquarters and Headquarters Detachment won the Table of Distribution and Allowances Medium category, and 396th Signal Company was the runner-up in the MTOE Small category.

Because of their success, the battalion companies immediately began preparing for a follow-on competition at the Network Enterprise Technology Command/9th Signal Command level. Last year, as runner-up in the TDA Medium category, HHD was selected to represent NETCOM in the Department of the Army competition. This year's NETCOM on-site inspections were scheduled from 29 August through 2 September.

AAME is an annual competition that allows company-level units to showcase the people and processes that contribute to the success of their maintenance programs. Units compete in categories including MTOE small (10 to 100 authorized personnel), medium (101 to 300 authorized personnel) or large (301 or more authorized personnel).

Competing units are expected to develop and refine their programs by re-writing standing operating procedures, delegating additional duties, conducting extensive maintenance

training, and maintaining their equipment through preventative maintenance checks and services.

To be considered for AAME recognition, companies must submit a written compilation of their maintenance program, history and successes. In the competition they must pass an on-site inspection of their maintenance areas and procedures. Company packets and inspection results are evaluated at higher levels of command and assessed against other units within their respective categories.

Company A, the largest company in the battalion, has a maintenance mission that includes over 50 vehicles, 20 generators, 170 weapons, and 20 communications terminals and shelters. During this AAME cycle, Company A not only grew in personnel strength from 30 to 170, but successfully fielded and validated the newest version of the Army's Joint Nodal Transport Capability equipment, which enables their tactical Signal mission.

Although maintenance is a commander's program, its success is guaranteed through the efforts of many individuals throughout the company. Runner-up 396th Sig Co's maintenance program is comprised of four sections:



Photo by SFC Lisa Holloway

SFC Robert Brown, Headquarters and Headquarters Detachment, 30th Signal Battalion, 516th Signal Brigade, checks an M1097A1 for leaks during a preventive maintenance evolution.

the Company Supply section, Satellite Communications section, the Company Arms Room; and the CBRN section, All four teams received accolades for their meticulously-organized records, immaculately clean equipment, up-to-date service packets, and sound knowledge of their areas of emphasis.

CPT David Richards graduated from the U. S. Military Academy in 2008 where he studied psychology and life Science. After graduating from the Basic Officer Leaders Course II and III, he arrived to the 516th Signal Brigade in January 2009. Since then, he has served as a platoon leader, company executive officer and S3 training officer. He will attend the Signal Captains Career Course in January 2012.

ACRONYM QuickScan

AAME - Army Award for Maintenance Excellence
CBRN - Chemical, Biological, Radiological, Nuclear
MTOE - Modified Table of Organization and Equipment
NETCOM - Network Enterprise Technology Command
SAMS - Standard Army Maintenance System
TDA - Table of Distribution and Allowances
TMDE - Test, Measurement, and Diagnostic Equipment

Pacific Theater operations

*By MAJ Glenn Medlock
and CPT Christopher M. Stacy*

The purpose of this article is to provide an informational overview of the NSC-Pacific; its design, implementation, and operations throughout the Pacific Theater. The focus is to describe the manner in which we “fight the network” leveraging key Network Service Center elements: the 311th Signal Command (Theater), the Pacific Theater Network Operations and Security Center, Theater Strategic Signal Brigades, and our most important asset - People. The NSC concept has been discussed in various articles and forums in recent past and is now successfully implemented across the globe. However, a thorough examination of how it actually performs from a regional perspective has yet to be communicated.

This article also describes the current organizational environment, the NSC-P capabilities, limitations, and the operational challenges the units in the Pacific face on a daily basis. The intent is to develop a higher level understanding of the requirements that enable the synchronization of the critical NSC elements across the Pacific LandWarNet and the challenges that impede progress. The intended impact is to provide practical knowledge, informing both the operating and generating forces in the Pacific theater as well as other NSCs across the Army enterprise of the increased capabilities that a well-designed NSC can provide to the Warfighter. A fully functional NSC will provide the 311th SC (T) with the ability to effectively extend and efficiently mitigate issues related to the delivery of IT services to users throughout the Pacific theater of operations despite geographic location of the supporting IT infrastructure.

Theory

The theory behind the NSC is multifaceted and well documented. The idea was born from the

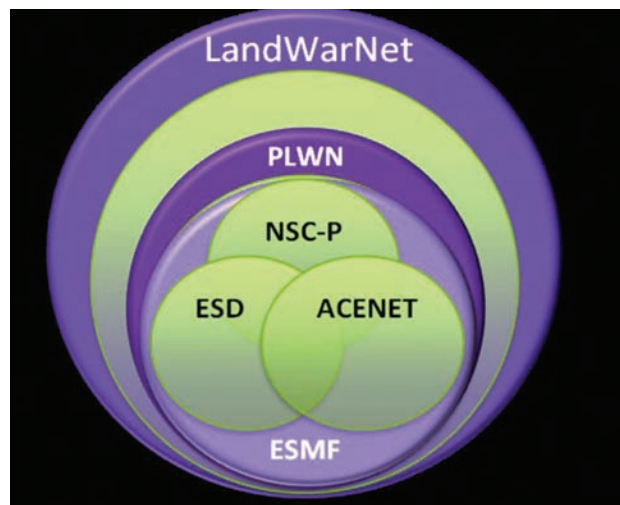
demand for increased mobility and modularization within the Army, in addition to the challenges presented by the new threat environment. These challenges drive the requirement for greater speed and agility in accessing mission critical network capabilities and information resources, while maintaining a high level of information security. The NSC-P accomplishes this by integrating and provisioning PLWN resources, including network access, equipment, and personnel to deliver a synchronized, seamless, and on-demand information capability in support of the Army's transformation to a more net-centric,

modular force. The NSC, at its most fundamental level, consists of globally standardized processes and procedures required to deliver enterprise services that are implemented and executed by the theater signal commands and their subordinate organizations. Structure

In order to completely understand the Network Service Center concept one must first discuss the sum of its parts. The NSC-P serves many masters which can rapidly evolve into a

management nightmare if not properly executed. The NSC is neither a place nor a location, but a framework – primarily a managerial concept. First and foremost, it is a point of injection for information sharing and reporting. It is comprised of a command and control element, an engineering element, and a services element that is designed to provide ease of access, efficiency, and standardization across the PLWN with one simple goal in mind – provide robust, reliable IT services transparently to the customer. Whether it is a tactical system providing communications to a remote customer in a Theater Security Concept Plan exercise, a strategic system on a desktop at an established base, or a real world contingency like humanitarian assistance support in Japan, the goal is to provide the same quality of service to the customer.

The NSC-P focuses its line of operation to support three overarching lines of effort; to operate, maintain, and defend the PLWN. These LOEs align themselves with our three higher



headquarters; United States Army Pacific, Network Enterprise Technology Command, and the U.S. Army Cyber Command and their requirements and expectations for the PLWN. The 311th Signal Command is under the operational control of USARPAC. The LOE associated with “operate” clearly fits the focus of this higher headquarters for operational control because USARPAC is primarily focused on ease of access and reliability of services for daily operations as well as any contingencies or exercises. Essentially, they aren’t focused on how we provide the service, just that the service is provided. The two higher commands that focus on the “how” are USARCYBER and NETCOM. The LOEs “maintain and defend” are really the “how” in the provision of services. Network defense must be present in every signal operation and the LOE “defend” that is associated with this supports the intent of USARCYBER to provide for secure, protected networks across the Global Information Grid. In order to extend network services there must be a conscientious and dedicated effort

to maintain the network. The “maintain” LOE supports NETCOM’s emphasis on consistency and reliability of network services.

For the Pacific theater, the 311th SC (T) is the Army’s IT service provider. They execute the activities associated with network operation, management, and defense and are responsible for managing and delivering IT services to Warfighters and other users of the PLWN. The 311th performs these duties through its headquarters and subordinate commands and organizations, including two Theater Strategic Signal Brigades. The NSC operations center reports to the 311th G3, aggregates and provides theater-wide status and service awareness, and is empowered to direct daily operations across NSC elements.

ACENET and ESMF

A key enabler and great contributor to the NSC-P success is TF ACENET. ACENET as

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described in a white paper by LTC Mumford, 516th Signal Brigade S3, "is a Task Force of USARPAC G6, IAPM, 311th SC (T) Project Managers, Network Engineers, 516th Brigade S3, P-TNOSC, P-RCERT and Regional NECs under the C2 of the 516th Signal Brigade commander to implement changes on the PLWN. The task force takes the outputs of the ESMF process and delivers changes requested by the customer.

Through daily teleconferences, ACENET synchronizes the changes directed by the NSC-P TASKORDs with the regional NECs current environment. ACENET effectively leverages excellence across the PLWN by identifying subject matter expertise and matrixes the virtual team to produce an implementation plan. ESMF verifies ACENET follows the left and right limits of the charter and delivers a Technical Acceptance Report agreed upon by the customer, ACENET, and the O&M team (NEC/TNOSC). Without ACENET, the NSC-P is just another data collection and reporting entity with no real ability or authority to effect change throughout the organization. ACENET is that authority and

it allows collaboration across the enterprise at various levels leveraging many different assets to efficiently effect change throughout the Pacific Theater. Operations

The NSC-P Operations Center manages the day-to-day operation of the components that constitute the NSC and performs other roles as directed by the 311th G3. This responsibility includes the clarification of theater discrepancies on Network Operations roles and responsibilities, allocation of major organizational work assignments, and review and approval/disapproval of theater enterprise-wide service requests or requests for change, etc. within the theater. Additionally, the NSC Operations Center maps service availability to mission impact and may direct or prioritize response efforts across NSC operational elements to minimize downtime or outages.

With operational oversight over other NSC elements, the operations center is the organization responsible for understanding and tracking the health of the PLWN; they work to ensure that proper procedures are followed within the NSC construct and that resources are allocated to best meet the needs of the theater. The performance of this role requires close coordination with theater

organizational planning and engineering functions, as well as meticulous oversight of 311th specific projects.

A critical responsibility for the NSC operations center is managing relations with the supported Army user community. The NSC operations center personnel negotiate theater-wide service level agreements, remediate service disputes, coordinate inter-theater transitions, and collaborate with unit commanders to understand the requirements of the user community.

Theater Network Operations and Security Center

The TNOSC is a key component, operating as a synchronized element in concert with all other 311th operational entities to execute the NSC operational concept. They are primarily responsible for the technical operation, management, and defense of their respective theater LWN, situational awareness reporting, and coordination of theater service support activities. TNOSCs provide the NSC-P and other organizations NETOPS situational awareness and reporting information, and work closely with Regional Computer Emergency Response Teams in the defense portion of their mission. They also perform policy dissemination, compliance monitoring and enforcement, and, report compliance status directly to the NSC-P, NETCOM, and USARCYBER.

Theater Strategic Signal Brigades

Currently, the 311th controls two TSSBs that disseminate situational awareness data as required; 1st Signal Brigade, which includes the K-TNOSC, and three Signal Battalions (36th,

**Signal NCOs
conducting daily
business in the P-
TNOSC Operations
Center**





The standardized tactical entry point site at Fort Greeley, Alaska operated by personnel of the 59th Signal Battalion

41st, and 304th), is located at Camp Walker, in the Republic of Korea. They provide the 1st Signal Brigade Commander with near real-time information about the status of KLWN assets and operations on the Korean peninsula. Their focus is primarily on Combined Enterprise Regional Information Exchange – Korea networks. The 516th Signal Brigade, which includes the P-TNOSC and five Signal Battalions (30th, 307th, 58th, 59th, and 78th), is located on Fort Shafter, Hawaii. They provide the 516th Signal Brigade Commander with near real-time information about the status of PLWN assets and operations outside of the Korean peninsula. Their focus is on “USARPAC” networks. The 1st and the 516th both staff and manage the TNOSCs as well as regional Network Enterprise Centers. The subordinate battalions under the TSSBs serve as the tactical arms of the brigades and deploy Warfighter Information Network – Tactical assets forward in support of TSCP exercises and real world contingencies. They essentially extend the network throughout the Pacific Theater to provide operating forces with reach-back capabilities to the LWN.

Because of its location and operational relationship, the 516th Signal Brigade is considered to be an essentially organic part of the NSC-P construct. Due to the fact that the 311th is an orders based unit, the 516th must receive and process these orders for dissemination and assignment to subordinate battalions for execution. The 516th provides the conduit from the 311th to the operational Signal battalions. Not only does the 516th serve the NSC-P in this function, it also provides manning augmentation to the operations center when called upon. Personnel are detached from the Brigade HQ, 30th and the 307th Signal Battalion to help provide the necessary manning coverage for 24/7 operations. For the purpose of this article we will only discuss the 516th Signal Brigade and its subordinate battalions because of the command relationship with and proximity to the NSC-P.

Regional Hub Node

An additional element of the theater NSC construct, is the Regional Hub Node. It will be primarily responsible for managing and provisioning

satellite transport services for Joint Network Node enabled units in theater. The 311th Pacific RHN is not currently in operation, however, an interim RHN will be established in Guam this fiscal year. It will provide the interface into the LWN for WIN-T assets, including assembly of the transmission plan and support of satellite communications equipment at the RHN site, and, tying the tactical networks securely into the enterprise.

Currently, our deployed signal assets tie into the PLWN by transmitting to regional Strategic Tactical Entry Points located throughout the Pacific Theater. We have access to STEP sites in Hawaii, Okinawa, Alaska, California, and even as far as Georgia if ever the need arise.

Network Enterprise Center

Network Enterprise Centers, formerly known as Directorates of Information Management are the organizations that support and maintain IT infrastructure located on posts, camps, and stations. NECs also provide

(Continued on page 64)

touch labor and direct support to users as an extension of the Enterprise Service Desk. Each installation has a single NEC responsible to operate all installation level IT infrastructure. Additional tasks of the NEC include situational reporting activities, local planning and engineering, local enforcement of Department of Defense and Army NETOPS and Information Assurance policies, and service request support for installation tenants. NECs normally work independently of the TNOSCs, but on occasion, direct coordination is necessary. The NSC-P works through the P-TNOSC and the 516th to ensure that PLWN related policies, procedures, and plans are properly executed and issues that may arise at the NEC level are mitigated expeditiously.

Network Monitoring

The NSC-P exercises various means of C2 through the use of leader's tickets, trouble tickets, teleconferences, and battle tracking software. Leader's tickets are predefined criteria that state when certain conditions are met, shift personnel alert leadership so that they can take action. Leader's tickets are normally commander's critical information requirements that require a higher level of coordination or attention for action or decision making and are transmitted through email or telephony.

Trouble tickets are of a different nature; they are designed to accomplish network related tasks and are submitted through a program called Remedy. Remedy consolidates tickets for tracking and assigning responsibility to the network technicians or NETOPS teams for action. Remedy provides a means for centralized management of ticket issuance and fault mitigation to get the job done.

Teleconferencing is where the NSC-P can really exercise its control. Teleconferences are held daily and provide a forum for all involved with the network to discuss current and projected issues, coordinate planning, and organization, or anything else related to the network. Everyone from the highest level of leadership to the lowliest network technician participates in these teleconferences and that is where the magic happens. These teleconferences enable the NSC concept to function without boundaries by getting things accomplished that would otherwise be caught up in the "stovepipe" without direct coordination. The beauty of it is that everyone that gets involved is informed at the same time thus avoiding confusion that may stem from loss in translation by following the normal chains of coordination.

Battle tracking and analysis is an absolute necessity and it is accomplished through the use of Spectrum

Network Fault Manager and eHealth Performance Manager to proactively identify possible problems and resolve incidents with thousands of networking components that reside on the PLWN. Automated alerts and root cause analysis help to ensure these issues are dealt with promptly. Currently, the P-TNOSC manages the Spectrum servers, but provides Spectrum views of all network nodes and links to the NSC-P. Because of this, the NSC-P has much better visibility and control of its IT enterprise. As a result network management and incident response is greatly enhanced.

Constraints and Limitations

By definition, the NSC-P will integrate Connect, NETOPS, and Service capabilities, executed by theater signal organizations to effectively and efficiently manage, coordinate, and provision LWN capabilities for operating and generating forces across the theater. Doing so, however, is not without its difficulties. Many constraints and limitations hinder progress almost daily; some of these are described below. By discussing these factors, we hope to empower other NSCs with the knowledge to thwart these encumbrances and avoid the pitfalls of NSC mismanagement.

Facilities

The first constraint is in regard to space limitations at the NSC-P Operations Center and the P-TNOSC. Although both the NSC-P and the P-TNOSC are located in the same building, they reside on opposite ends. In a perfect world, the NSC-P would be co-located with the P-TNOSC & RCERT, but due to space required to fulfill this condition, it is not currently feasible to merge the two centers. The 311th is working with the P-TNOSC to relocate some of the NSC-P Operations Center staff closer to the P-TNOSC in the interim that a more enduring solution can be attained. 311th is discussing a possible solution to relocate the NSC-P and members of the P-TNOSC to a building that houses DISA. This would solve the disconnect problem between the various organizations and provide a more centralized management function.

Personnel

As we structure the NSC-P to cover 24/7 operations, 365 days of the year, we will always run into manning issues, both military and civilian. The NSC-P is currently manned by a small, permanently assigned cell that provides C2 for normal day to day business. When a requirement is identified such as a TSCP exercise or real world contingency, the cell is augmented from across the 311th, the 516th subordinate units, and the P-TNOSC in order to cover the manning requirements throughout the duration of the operation. The P-TNOSC is mostly comprised of

contractors who have strict boundaries in regards to working overtime. Funding becomes an issue during contingencies and must be well managed in order to avoid unnecessary expenditures. Mission readiness is affected when military personnel are detached from the brigade headquarters and subordinate battalions causing a domino effect across the entire 311th SC (T). This puts a strain on the units that must support the NSC-P reducing their ability to perform their normal duties as directed.

Geography

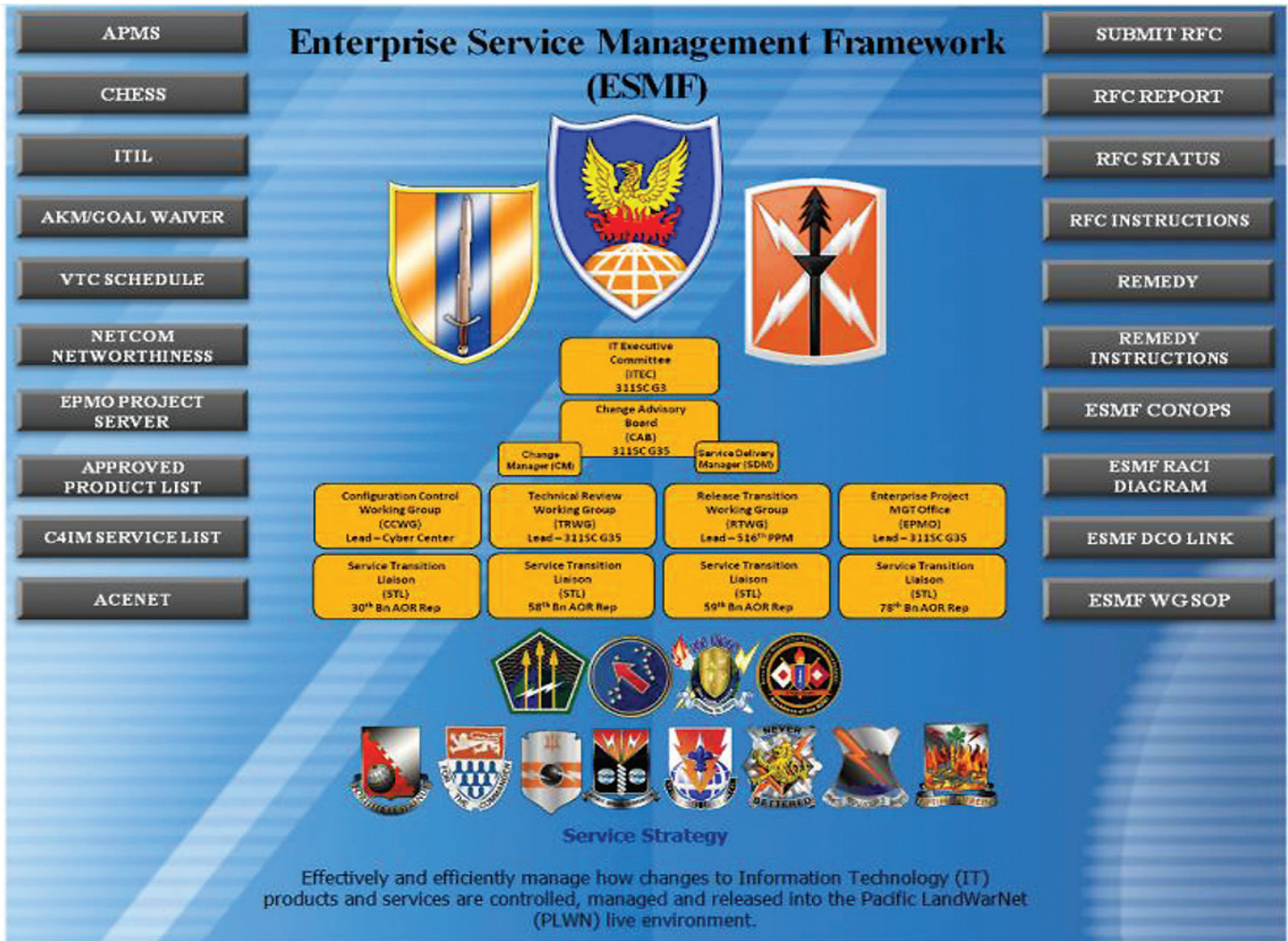
Subordinate commands geographically disparate from the 311th SC (T) pose yet another challenge that is directly correlated with the funding and manning issues mentioned above. Spanning 7 time zones across the Pacific Theater and crossing the International Dateline, the battalions under the 516th Signal Brigade operate on a different clock. When the duty-day ends in Hawaii, it is in full swing in Japan. This makes it especially difficult to run 24/7 operations for the civilian sector in terms of additional shifts,

authorized overtime, or unscheduled network outages that always arise at the most inopportune moments. The optimal solution would be to train military personnel to cover down on these gaps. However, we have become so dependent upon our highly skilled civilian workforce that we have been unable to attain this mastery at the military level. Eventually, balance will have to be achieved through a combination of both civilian and military personnel in an effort to increase mission readiness and effectiveness.

Organizational Structure and Reporting

The question one has to ask when dealing with multiple echelons of the various units located across the Pacific is “Who is really in charge and what is our command relationship with regards to the NSC-P construct?” As an example, the P-TNOSC falls under the 516th and works directly with the

(Continued on page 66)



The 311th SC (T) ESMF home page

(Continued from page 65)

NSC-P under the 311th. They also report directly to NETCOM and USARCYBER for LWN related issues.

This can create a lot of confusion for reporting purposes and sometimes causes conflict within the brigade. The military command structure does not always lend itself to transparency thus creating the “stovepipe” effect that we must normally adhere to yet simultaneously strive to avoid.

At times, decisions need to be made almost immediately despite chain of command relationships between higher headquarters, the 311th, 516th, TNOSCs, and the operating and generating forces.

A fluid, well-organized NSC will deter this inefficiency if properly executed, understood, and maintained by the command.

Summary

The NSC-P synchronizes operations of many elements to provide the commanding general of the 311th SC (T) and higher echelons a complete operational picture of the PLWN. In essence,

it is a single focal point through which to monitor, manage, sustain, and, when necessary, direct signal forces throughout the Pacific Theater.

A key to enabling the NSC-P to successfully achieve its goals is to find balance between filling and funding personnel and facilities requirements and synergizing the support requirements with the military hierarchical structure. The goal is to extend secure, robust LWN network services across the Pacific Theater and do it transparently to the customer providing a seamless transition from garrison to the deployed environment. The greatest challenge is in bringing together all the people, processes, and infrastructure responsible for the operation, management and health of the network under a single, administrative control entity. The NSC-P is that entity, and if properly manned, equipped, and funded, can effectively accomplish this significant mission

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ACRONYM QuickScan

C2 – Command and Control
CENTRIX-K – Combined Enterprise Regional Information Exchange – Korea
ESD – Enterprise Service Desk
ESMF – Enterprise Services Management Framework
GIG – Global Information Grid
IAPM – Information Assurance Project Management
JNN – Joint Network Node
KLWN – Korean LandWarNet
K-TNOSC – Korea TNOSC
LOE – Line of Effort
LOO – Line of Operation
LWN – LandWarNet
NEC – Network Enterprise Center
NETCOM – Network Enterprise Technology Command
NETOPS – Network Operations
NSC – Network Service Center
NSCP – Network Service Center Pacific

O&M – Operations and Maintenance
PLWN – Pacific LandWarNet
P-RCERT – Pacific Regional Computer Emergency Response Team
P-TNOSC – Pacific- Theater Network Operations and Security Center
RCERT – Regional Computer Emergency Response Team
RHN – Regional Hub Node
STEP – Standardized Tactical Entry Point
TAR – Technical Acceptance Report
TASKORD – Tasking Order
TNOSC – Theater Network Operations and Security Center
TSCP – Theater Security Concept Plan
TSSB – Theater Strategic Signal Brigade
USARCYBER – United States Army Cyber Command
USARPAC – United States Army Pacific
WIN-T – Warfighter Information Network - Tactical

Web based mission control

By Claire Schwerin

Combining the power of Google Earth, social networking and existing tactical communications systems, the Army is rolling out a new web-based tool that could deliver a common operating picture of the battlefield to any network user with a laptop.

Known as Command Web, the technology has received positive feedback from Soldiers in Afghanistan who are currently experimenting with a beta version, officials said. The intent is to extend the collaborative capabilities of mission command systems such as Command Post of the Future to additional users, and down to the company level, without piling on additional hardware or training.

Command Web also leverages the same software

framework as the web version of the Army's premier intelligence, surveillance and reconnaissance system. The common web framework provides the Army's initial convergence platform unifying intelligence and operations capabilities, officials said.

"Command Web can be a window into CPOF for those who don't have the real deal," said LTC Thomas Bentzel, the Army's product manager for Tactical Mission Command. "It can't replicate CPOF's depth or power, but it's the next best thing. And it's got great potential for expansion and convergence with other systems."

CPOF is the primary common operational picture viewer used by the Army in all theaters, combining feeds from different mission command systems to provide a broad

spectrum of information that commanders and Soldiers can use to collaborate. While CPOF is delivered to troops as a complete "thick client" package including computer hardware, the "thin client" web version offers similar functionality for any user with access to the Army's tactical network.

"As long as you have the network capability, now all you really need is a laptop," said Jennifer Zbozny, chief engineer for the Army's Program Executive Office Command, Control and Communications-Tactical, the organization responsible for Command Web.

Command Web does not bring the full depth and power of CPOF, but does provide a subset of capabilities that a user would need to digitize their staff function even though they only have a standard laptop. Command Web gives the ability to build those ad hoc networks to help extend the CPOF environment in support of not only battalion/brigade combat team/division/corps operations, but also strategic, joint interagency intergovernmental and multinational, homeland defense and non-government organization environments where the Army needs to have horizontal and vertical interactions with other entities.

The web capability and service offering will continue to expand, ultimately providing as much as 80 percent of current mission command functionality via the web environment, officials said.

Given that simple access, Command Web could create

(Continued on page 68)

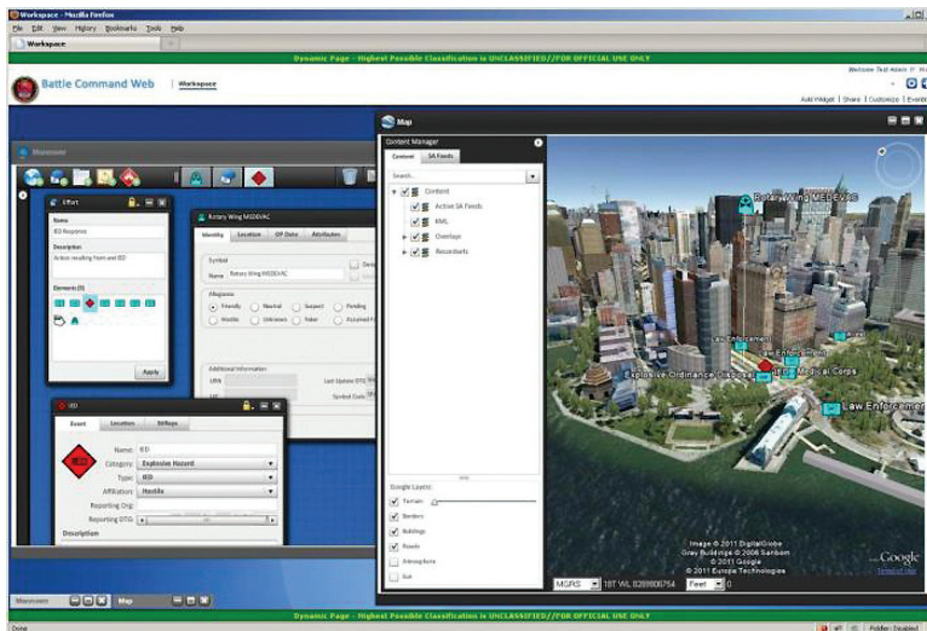


Image 1: Command Web, shown in this screen capture, has a core set of capabilities provided through widgets such as Maneuver, Google Earth, MilSpace, tactical air coordination and fires planning.

(Continued from page 67)

efficiencies in training as well as in theater.

Command Web's core set of capabilities is provided through widgets such as Maneuver, Google Earth, MilSpace, tactical air coordination and fires planning. Maneuver gives users a web-based view of the common operating picture and a data management capability, allowing Soldiers to plan, collaborate and execute within and across echelons and functional areas. Users can also collaborate between Command Web and CPOF in real time.

The Google Earth widget provides a familiar and powerful mechanism for three-dimensional battle space management. MilSpace provides social networking functionality and enhanced personalization within the tactical environment, speeding and simplifying communications as compared to email or other methods.

To minimize the training burden on users, Command Web was designed with a standard Army Battle Command Systems interface and mimics the functionality, naming conventions and other attributes of CPOF, said Jeremy Pilkington, assistant product manager of the Client Coordination Cell with Tactical Mission Command.

Also like CPOF, Command Web employs a software developer's kit to enable rapid third-party development of new war fighting capabilities. Command Web's use of the National Security Agency's Ozone framework offers a non-proprietary, government-owned solution that allows for maximum interoperability across organizations and agencies.

The Ozone framework is also used by the web version of the Army's chief ISR system, known as the Distributed Common Ground System - Army. That



U.S. Army Photo

A Soldier uses Command Post of the Future. Command Web extends the collaborative capabilities of mission command systems such as CPOF to additional users, and down to the company level, without piling on additional hardware or training.

lays the groundwork for future convergence and interoperability across the intelligence and operations communities, officials said.

Several active Army units in Afghanistan received the beta version of Command Web, and other deploying units will soon use it in theater as well, officials said. Next spring, Command Web will be a part of the Army's Network Integrated Evaluation 12.2 at White Sands Missile Range, N.M., and Fort Bliss, Texas.

Command Web and CPOF – which is also known as the Mission Command Workstation – are the two pillars of an ongoing effort to “collapse” the boundaries between maneuver, fires, sustainment, air defense and airspace management applications. This effort,

spearheaded by Project Manager Mission Command, will improve overall collaboration and data sharing across the force.

“The era of stove piped functional systems is over, and has been for some time,” Bentzel said. “Command Web and Mission Command Collapse will be a catalyst for deep collaboration – not just within functional areas, but across them.”

Claire Schwerin is a staff writer for Symbolic Systems, Inc., supporting the Army's Program Executive Office Command, Control and Communications-Tactical (PEO C3T). She is a graduate of the University of Notre Dame and a former Statehouse reporter for *The Star-Ledger*, New Jersey's largest newspaper.

ACRONYM QuickScan

ABCS - Army Battle Command Systems
CPOF - Command Post of the Future
DCGS-A - Distributed Common Ground System - Army
PEO C3T - Program Executive Office Command, Control and Communications-Tactical

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